

Work Order ID 154485
Wednesday, December 14, 2016 10:51:31 A

154485

SHIP JAN 20TH 2017

Page 1

Item ID: D5162-041 Accept *N900040100* Setup Start *NS1*
Revision ID: Revision ID: Stop *NS2*
Item Name: Seat Structure Assembly
Start Date: 1/9/2017 Start Qty: 1.00 *1*
Required Date: 1/16/2017 Req'd Qty: 1.00 *1*
Reference: Customer: Cust Item ID:

Approvals: Process Plan: 15 Date: 1/11/17 Tooling: SPC (Y/N): Date: Run Start *NR1*
QC: Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3016	(DEO) A1								
D3017	C								
D5162	A								
D5189	A								

105 Pick Kit 0.00
105 Memo 0.05
Packaging

110 Weld per dwg A/R 4130 rod Batch: M127915 0.00
110 Memo 0.17
Large Fab FABRICATE D5189-041 AS PER DWG AND BY USING DT8622.

DO NOT OPEN HOLES TO SIZE, IT WILL BE OPEN UPON FINAL ASSEMBLY.
ONLY WELD STUD D4667-041 TO TUBE. END CAP WILL BE WELDED AFTER OPENING HOLES IN TUBE.

1 EA 17-1-12
1 EA 17-1-12

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____ Work Order update only

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐	Date: _____ Step #: _____ Description Work Order Deviation 	MRB (QS1042) Approval
Disposition				Completed By
				Lead hand / Supervisor Approval Verification
				QC / QA Coordinator Approval

FAULT CATEGORY			
Root Cause	Pressure/Forced	Temperature/Cure	Power Loss/Surge
Environment	☐	☐	☐
Design	☐	☐	☐
Doc/Data	☐	☐	☐
Equip/Tooling	☐	☐	☐
Handling/Pre	☐	☐	☐
Material	☐	☐	☐
Internal Transport	☐	☐	☐
Tribal Knowledge	☐	☐	☐
LOA	☐	☐	☐
Substation	☐	☐	☐
Past Expiry Date	☐	☐	☐
Misidentified	☐	☐	☐
No Re-verification	☐	☐	☐
Operator	☐	☐	☐
Offset/Setup	☐	☐	☐
Supplier	☐	☐	☐
Training	☐	☐	☐
Use for Testing	☐	☐	☐
Poor Information	☐	☐	☐
Rushing	☐	☐	☐
Product Improvement	☐	☐	☐
Process Improvement	☐	☐	☐
Manufacturing Process	☐	☐	☐
Past Due	☐	☐	☐
OTHER : _____			
Temperature/Cure Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐			
Pressure/Forced Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐			
Power Loss/Surge Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐			
Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			

Work Order ID 154485

Wednesday, December 14, 2016 10:51:31 A

154485

Item ID: D5162-041

Accept

Revision ID:

N9000040100

Setup Start

NS1

Item Name: Seat Structure Assembly

Stop

NS2

Start Date: 1/9/2017

Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/16/2017

Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

Weld per dwg A/R 4130 rod Batch: M127925 0.00

120

Large Fab

Memo

0.17

Large Fab

FABRICATE (2) D3016-041 AS PER DWG.

WELD ASSEMBLY USING DT8597 WELD JIG.

DO NOT DRILL HOLES AS THEY WILL BE TRANSFER DRILL AT FUTHER STEP.

DO NOT WELD GUSSETS AND BRACKET THEY WILL BE WELDED AT A FUTHER STEP.

1 EA 17-1-12

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____ Part No.: _____ NCR No.: _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval Date: _____ Step #: _____ QTY Effective: _____	
Description Work Order Deviation		Disposition		Completed By			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐			
Power Loss/Surge Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		QC / QA Coordinator Approval			

Work Order ID 154485

154485

Wednesday, December 14, 2016 10:51:31 A

Item ID: D5162-041

Accept

Revision ID:

N900040100

Setup Start

N.S.1

Item Name: Seat Structure Assembly

Stop

N.S.2

Start Date: 1/9/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/16/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

Weld per dwg A/R 4130 rod Batch: M127925 0.00

130

Large Fab

Memo

0.17

Large Fab

FABRICATE D3017-041 AS PER DWG:

USE DT8598 FOR BENDING D3017-1/3 TUBE.

USE DT8621 FOR DRILLING (#30 DRILL) BACK FRAME. ***DO NOT
OPEN HOLES IT WILL BE DONE AT FUTHER STEP***

USE DT8622 FOR DRILLING (#30 DRILL) D3017-5. ***DO NOT OPEN
HOLES IT WILL BE DONE AT FUTHER STEP***

USE DT8598 JIG FOR WELDING TUBES, LUGS AND ONE END CAP,
OTHER END CAP WILL BE WELDED AFTER OPENING HOLES.

140

OC5- Inspect part completeness to step on W/O 0.00

140

QC

Memo

0.00

Quality Control

① 11.0.16 20

1 17.1.12

Work Order ID 154485

154485

Wednesday, December 14, 2016 10:51:31 A

Item ID: D5162-041

Accept

Revision ID:

N900040100

Setup Start

N.S.1

Item Name: Seat Structure Assembly

Stop *N.S.2*

Start Date: 1/9/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/16/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

150

Large Fab

Memo

0.17

Large Fab

1- BOLT SEAT FRAME TO ASSEMBLY PLATE DT8624.

2- TRANSFER DRILL D5189-041 TO D3016-041 AS PER DWG USING #30 DRILL AND CLECO THEN DRILL TO FINISH SIZE.

3- TRANSFER DRILL SEAT PAN TO D5189-041 AND 3016-041.

4- TRANSFER DRILL SEAT AND D3016-041 TO D3017-041 USING DT DT AND USING TOOL TO ACHIEVE DESIRED ANGLE ON BACK REST.

155

155

Large Fab

Memo

0.17

Large Fab

ARMREST:

1- ASSEMBLE AND TRANSFER DRILL D5189-043 TO D3017-041. OPEN HOLES TO FINISH SIZE AS PER DWG

STRUT:

1-

SEAT BRACE:

1- USE DT10132 AND DT10133 TO TRANSFER DRILL HOLES IN SEAT PAN AND SEAT BRACE.

Weld per dwg A/R 4130 rod Batch: M127925 0.00

1 ea 1/7-1-12

1 ea 1/7-1-12

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Work Order: _____	Suspected Unapproved	Rework	Skid-tube	Cross tube	Water Jet
Part No. _____		Scrap	Machining	Small Fab	Prod. Eng. Coord.
NCR No. _____		Use-as-is	Thermoforming	Finishing	Rec/Store/Packaging
Date : _____		QTY Effective : _____		Supplier	
Step #:		MRB (QSI042) Approval			
Description Work Order Deviation		Disposition			
		Completed By			
		Lead hand / Supervisor Approval Verification			
		QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY			
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence
Past Expiry Date	Manufacturing Process				
Misidentified	Past Due				
OTHER :					

Work Order ID 154485

154485

Wednesday, December 14, 2016 10:51:31 A

Item ID: D5162-041 Accept *N9000040100* Setup Start *N.S.1*
 Revision ID: Seat Structure Assembly Stop *N.S.2*
 Start Date: 1/9/2017 Start Qty: 1.00 *1*
 Required Date: 1/16/2017 Req'd Qty: 1.00 *1*
 Reference: Cust Item ID:
 Customer:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC5- Inspect part completeness to step on W/O	0.00							

160
 QC Memo 0.00
 Quality Control

165 Weld per dwg A/R 4130 rod Batch: M127925 0.00

165
 Large Fab Memo 0.17
 SEAT FRAME:
 1- WELD D3016-13 BRACKET, D3016-15 GUSSET AND D3016-17 GUSSET
 AND PER DWG

2- LAST STEP IS TO FINISH WELDING ALL WELDS AS PER DWG (SEAT
 AND BACK FRAME)

170 QC9- Inspect visual per QSI004- Fusion Welds 0.00

170
 QC Memo 0.00
 Quality Control

1 EA 17-1-12

10 NOLK 3D

10 F-016 80

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Cross tube ☐ Skid-tube ☐ Water Jet ☐ Small Fab ☐ Machining ☐ Prod. Eng. Coord. ☐ Finishing ☐ Thermoforming ☐ Rec/Store/Packaging ☐ Composite ☐ Large Fab ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐	
Date : _____		Step #: _____		QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation				Disposition			
Completed By				Lead hand / Supervisor Approval Verification			
QC / QA Coordinator Approval							

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure			Power Loss/Surge	Positioned Wrong				
Design	Operator	Bending	Set-up			Folio/Program	Outside Dimensions				
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route			Grain	Over/Under tolerance				
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect			Weld	Part Incorrect				
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified			Wrong Stock Pulled	Part Lost/Missing				
Material	Use for Testing	Cuffs	Contamination			Out of Sequence	Part Moved				
Internal Transport	Poor Information	Crushing	Countersink			Off-set	Drawing				
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short			Mislabeled	Finish				
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear			Fit/Function	Misread				
Substation	Process Improvement	Marks/Chatter	Drill Holes			Misaligned/off center	Turning Sequence				
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER : _____									

Work Order ID 154485

154485

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Wednesday, December 14, 2016 10:51:31 A

Item ID: D5162-041

Accept

N9000040100

Setup Start

N.S1

Revision ID:

Item Name: Seat Structure Assembly

Stop

N.S2

Start Date: 1/9/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/16/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

175 QCS- Inspect part completeness to step on W/O

0.00

175

QC

Memo

0.00

Quality Control

180

Chemical Conversion Coat per QSI005 4.1

0.00

180

HandFinish

Memo

0.03

Hand Finishing

CHEMICAL CONVERSION SEAT PANEL D3022-1 AND BACK PANEL
D3023-1 AS PER DWG

190

QC7-Inspect Chemical Conversion Coat

0.00

190

QC

Memo

0.00

Quality Control

(X1)

2017/01/17

BE-3

1

10.16

30

1X

17/01/18

DAS
36
9-89

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only



Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS				Engineering Quality Other	
Part No. _____		Rework Scrap Use-as-is		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier	
NCR No. _____		Suspected Unapproved							
Date: _____		Step #:		QTY Effective:				MRB (QS1042) Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval					

Work Order ID 154485

154485

Wednesday, December 14, 2016 10:51:31 A

Item ID: D5162-041

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: Seat Structure Assembly

Stop *NS2*

Start Date: 1/9/2017

1

Cust Item ID:

Required Date: 1/16/2017

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept Qty

Reject Qty

Reject Number

Insp. Stamp

200

2000

Small Fab

Memo

0.33

(TO FABRICATE D5162-051)
ASSEMBLE D3023-1 PANEL TO D3017-041 BACK FRAME AS PER DWG
D5162-051

Small Fab

210

2100

QC

Quality Control

OCS- Inspect part completeness to step on W/O

0.00

Memo

0.00

220

2200

Powdercoat

Powder Coating

Grey Sandtex(Ref:4.3.5.6) per OSI005 4.3

0.00

Memo

0.08

POWDER COAT ALL INDIVIDUAL PARTS

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

1/13/18 9:58
9:50
375°
1:00

JAN 18 2017

1 17-01-21 2018

Work Order ID 154485

154485

Page 8

Wednesday, December 14, 2016 10:51:31 A

Item ID: D5162-041

Accept

Revision ID:

N9000040100

Setup Start

NS1

Item Name: Seat Structure Assembly

Stop

NS2

Start Date: 1/9/2017

1

Cust Item ID:

Required Date: 1/16/2017

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept Qty

Reject Qty

Reject Number Insp.
Stamp

230 QC3- Inspect Part Finish

0.00

230

Memo

0.00

QC

1X

17/01/25 36 9.89

DAS

240 QC4- Inspect Part Finish

0.00

240

Memo

0.17

QC

1X

17/01/25 36 9.89

DAS

250 QC5- Inspect part completeness to step on W/O

0.00

250

Memo

0.00

DAS 30 9.89

11

JAN 25 2017

QC

DAS



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS									
Part No. _____		Rework Scrap Use-as-is		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other			
NCR No. _____		Suspected Unapproved		Large Fab		Finishing		Composite		Supplier			
Date: _____		Step #: _____		QTY Effective: _____		MRB (QS1042) Approval							
Description Work Order Deviation				Disposition									
												Completed By	
												Lead hand / Supervisor Approval Verification	
												QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/ Surge	Positioned Wrong								
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions								
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance								
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect								
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing								
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved								
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing								
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish								
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread								
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence								
Past Expiry Date	Manufacturing Process												
Misidentified	Past Due												
OTHER: _____													

Work Order ID 154485

Wednesday, December 14, 2016 10:51:31 A

154485

Page 9

Item ID: D5162-041

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: Seat Structure Assembly

Stop

NS2

Start Date: 1/9/2017

Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/16/2017

Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

260

Identify as per dwg & Stock Location:

CSA

0.00

260

Packaging

Memo

0.00

DAS
30
9-89

JAN 25 2017

Packaging

270

QC21 - Final Inspection - Work Order Release

0.00

270

QC

Memo

0.02

Quality Control

JAN 25 2017

DAS
21
9-89

JAN 26 2017



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS							
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐		Cross tube ☐ Water Jet ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Finishing ☐ Rec/Store/Packaging ☐ Composite ☐ Supplier ☐							
NCR No. _____		Suspected Unapproved ☐		Skid-tube ☐ Engineering ☐ Machining ☐ Quality ☐ Thermoforming ☐ Other ☐ Large Fab ☐							
Date : _____		Step #: _____		QTY Effective : _____							
Description Work Order Deviation		Disposition		MRB (QS1042) Approval							
								Completed By			
								Lead hand / Supervisor Approval Verification			
QC / QA Coordinator Approval											

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
OTHER : _____											

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

154485

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 1/9/2017

Required Date: 1/16/2017

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP REV:A 14.11.05 NEW ISSUE DD VER:FJLM IPP
REV:B 15-02-06 AS PER DWG REV:A DD VER:FJLMIPP REV:C
16.08.31 ADD D3016 PARTS DD VER:FJLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3016-1 Manufactured No 105 Each 6.0000 2 2

D3016-1
Tube

Location Loc Qty Loc Code

W/A002

150737

153647

6

2

4

16-12-14
JSC

D3016-11 Manufactured No 105 Each 6.0000 2 2

D3016-11
Saddle

Location Loc Qty Loc Code

W/A001

150742

W/A002

153648

2

2

4

16-12-14
JSC

D3016-3 Manufactured No 105 Each 13.0000 4 4

D3016-3
Tube

Location Loc Qty Loc Code

W/A002

150738

153645

13

5

8

16-12-14
JSC

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		AGAINST DEPARTMENT/PROCESS		Engineering	
Part No. _____		Cross tube		Water Jet	
NCR No. _____		Small Fab		Prod. Eng. Coord.	
Date: _____		Thermoforming		Rec/Store/Packaging	
Step #: _____		Large Fab		Supplier	
Description Work Order Deviation		Disposition		MRRB (QS1042) Approval	
Completed By		Lead hand / Supervisor Approval Verification		QC / QA Coordinator Approval	

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Temperature/Cure	Power Loss/ Surge	Positioned Wrong	Set-up	Folio/Program	Outside Dimensions	Bending	Pressure/Forced	Grain	Over/Under tolerance
Design	Operator	BOM/Route	Weld	Part Incorrect	Broken/Damage/Defect	Wrong Stock Pulled	Part Lost/Missing	Centre Not Concentric	Cracks	Out of Sequence	Part Moved
Doc/Data	Offset/Setup	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing	Contamination	Out of Sequence	Part Moved	Crimp/Kink/Ripple/Wave	Cuffs	Off-set	Drawing
Equip/Tooling	Supplier	Countersink	Wrong Stock Pulled	Part Lost/Missing	Cut Too Short	Misaligned	Finish	Use for Testing	Crushing	Mislabeled	Misread
Handling/Pre	Training	Instructions Incomplete/Unclear	Wrong Stock Pulled	Part Lost/Missing	Drill Holes	Misaligned/off center	Turning Sequence	Poor Information	Heat Treat	Fit/Function	
Material	Use for Testing	Drill Holes	Wrong Stock Pulled	Part Lost/Missing	OTHER :			Internal Transport	Wave/Twist in Tube		
Internal Transport	Poor Information	OTHER :						Tribal Knowledge	Marks/Chatter		
LOA	Rushing							Substation			
Past Expiry Date	Product Improvement							Manufacturing Process			
Misidentified	Process Improvement							Past Due			

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017
Start Qty: 1.00
Required Date: 1/16/2017
Required Qty: 1.00

D3016-5 Manufactured No

105 Each 6.0000 2 2

D3016-5

Tube

Location Loc Qty Loc Code

WA002

150739
153646

6
2
4

105 Each 13.0000 4 4

D3016-7 Manufactured No

D3016-7

Tube

Location Loc Qty Loc Code

WA002

150740
153644

13
5
8

105 Each 6.0000 2 2

D3016-9 Manufactured No

D3016-9

Saddle

Location Loc Qty Loc Code

WA002

150741
153643

6
2
4

110 Each 11.0000 1 1

D5190-1 Manufactured No

D5190-1

Armrest Pitting

Location Loc Qty Loc Code

WA003

145951
152308

11
1
10

110 Each 11.0000 1 1

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS									
Part No. _____		Rework Scrap Use-as-is		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other			
NCR No. _____		Suspected Unapproved		Large Fab		Finishing		Composite		Supplier			
Date: _____		Step #: _____		QTY Effective: _____		MRB (QS1042) Approval							
Description Work Order Deviation				Disposition									
												Completed By	
												Lead hand / Supervisor Approval Verification	
												QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong								
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions								
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance								
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect								
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing								
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved								
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing								
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish								
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread								
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence								
Past Expiry Date	Manufacturing Process												
Misidentified	Past Due												
OTHER: _____													

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐		MRB (QS1042) Approval											
Date : _____		Step #: _____		QTY Effective : _____																			
Description Work Order Deviation				Disposition																			
Completed By				Lead hand / Supervisor Approval Verification				QC / QA Coordinator Approval															
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐				No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐				Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐				Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐				Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____																							

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485

D5162-041

Start Date: 1/9/2017

Start Qty: 1.00

Required Date: 1/16/2017

Required Qty: 1.00

D3017-7 Manufactured No

130 Each

14.0000

3 3

D3017-7 ✓

**

EL 17-1-12

Lug

Location

Loc Qty

Loc Code

WA002

14

148093

10

133517

4

130 Each

2.0000

1 1

D3023-1 Manufactured No

D3023-1

**

EL 17-1-12

Back Panel

Location

Loc Qty

Loc Code

WA001

2

152178

1

152741

1

105

17.1900

2.5

2.631579

No

Purchased

M4130NTD 750W 083

4130 RD Tube .750 x.083W

**

EL 17-1-4

Location

Loc Qty

Loc Code

MAT032

17.19

14134001

7.69

m135242

9.5

150 Each

3.0000

1

1

No

Manufactured

D3022-1 ✓

**

EL 17-1-12

Seat Pan

Location

Loc Qty

Loc Code

WA001

3

146032

1

152327

1

152877

1

1

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Cross tube ☐ Skid-tube ☐ Water Jet ☐ Small Fab ☐ Machining ☐ Prod. Eng. Coord. ☐ Finishing ☐ Thermoforming ☐ Rec/Store/Packaging ☐ Composite ☐ Large Fab ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐	
Date : _____		Step #: _____		QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation				Disposition			
Completed By				Lead hand / Supervisor Approval Verification			
QC / QA Coordinator Approval							

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER : _____									

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017

Start Qty: 1.00

Required Date: 1/16/2017

Required Qty: 1.00

D3016-15

Manufactured

No

165 Each

10.0000

2 2

D3016-15

Gusset

**

Q 17-1-12

Location
W/A002

Loc Qty
10

Loc Code

119895

2

14.0000

2 2

148096

8

14.0000

2 2

Manufactured

No

165 Each

14.0000

2 2

D3016-13

Bracket

**

Q 17-1-12

Location
W/A002

Loc Qty
14

Loc Code

141440

2

18.0000

2 2

152206

12

18.0000

2 2

Manufactured

No

165 Each

18.0000

2 2

D3016-17

Gusset

**

Q 17-1-12

Location
W/A002

Loc Qty
18

Loc Code

138268

18

24.0000

4 4

Manufactured

No

165 Each

24.0000

4 4

D3017-11

Cap

**

Q 17-1-12

Location
W/A001

Loc Qty
24

Loc Code

142889

24

24.0000

4 4

Manufactured

No

165 Each

24.0000

4 4

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Large Fab ☐ Composite ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐	
Date: _____		Step #: _____		QTY Effective: _____		MRB (QS1042) Approval	
Description Work Order Deviation				Disposition			
Completed By				Lead hand / Supervisor Approval Verification			
QC / QA Coordinator Approval							

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER: _____									

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017

Start Qty: 1.00

Required Date: 1/16/2017

Required Qty: 1.00

MS20600-AD4W2

Purchased

No

200

Each

363.0000

46

~~46~~ 40

MS20600-AD4W2

17/01/18

DAS 36 9-89

Rivet

Location

Loc Qty

Loc Code

CCK004

m136047

120

120

GA

m126475

83

6

m135127

77

160

ST308

m134762

40

120

m135948

240

Each

595.0000

1

~~1~~ 40

AN4-6A

Purchased

No

240

Each

595.0000

1

~~1~~ 40

AN4-6A

DAS 6 9-89

JAN 25 2017

BOLT

Location

Loc Qty

Loc Code

OVER002

M136263

200

200

ST345

M135407

395

2

M135683

193

200

M135945

2

~~2~~ 1

NAS43DD4-16FC

Purchased

No

240

Each

72.0000

2

~~2~~ 2

NAS43DD4-16FC

DAS 6 9-89

JAN 25 2017

Spacer

Location

Loc Qty

Loc Code

ST550

m133790

72

2

m135774

70

2

~~2~~ 2

~~2~~ 2

~~2~~ 2

MS20600-AD4W2

M129795

6x

17/01/18

DAS 36 9-89

Wednesday, December 14, 2016 10:51:38 AM

Shop Packet Print

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only



Work Order: _____		AGAINST DEPARTMENT/PROCESS		Engineering	
Part No. _____		Cross tube		Water Jet	
NCR No. _____		Small Fab		Prod. Eng. Coord.	
		Finishing		Rec/Store/Packaging	
		Composite		Supplier	
Date: _____		QTY Effective: _____		MRB (QS1042) Approval	
Step #: _____		Disposition			
Description Work Order Deviation				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due	OTHER: _____									

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

154485

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 1/9/2017

Required Date: 1/16/2017

Start Qty: 1.00

Required Qty: 1.00

AN4-4A

Purchased

No

240

Each

84.0000

1

1

AN4-4A

BOLT

**

DAS JAN 25 2017 6 9-89

Location

ST346

m129390

Loc Qty

84

Loc Code

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

3.0000

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1

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17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

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1

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17-1-12

m129390

105

Each

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1

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17-1-12

m129390

105

Each

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17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

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17-1-12

m129390

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17-1-12

m129390

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Each

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17-1-12

m129390

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Each

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17-1-12

m129390

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Each

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Each

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17-1-12

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Each

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17-1-12

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m129390

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17-1-12

m129390

105

Each

3.0000

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17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

3.0000

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17-1-12

m129390

105

Each

3.0000

1

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17-1-12

m129390

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Each

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17-1-12

m129390

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Each

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17-1-12

m129390

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17-1-12

m129390

105

Each

3.0000

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1

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17-1-12

m129390

105

Each

3.0000

1

1

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17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

m129390

105

Each

3.0000

1

1

**

17-1-12

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		MRB (QS1042) Approval	
Date: _____ Step #: _____		QTY Effective : _____		Disposition					
Description Work Order Deviation				Completed By					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					

FAULT CATEGORY											
Root Cause		Pressure/Forced				Temperature/Cure		Power Loss/Surge		Positioned Wrong	
Environment	No Re-verification	Bending	Set-up	Folio/Program	Outside Dimensions	Cracks	BOM/Route	Grain	Over/Under tolerance	Part Lost/Missing	Part Moved
Design	Operator	Centre Not Concentric	Broken/Damage/Defect	Weld	Part Incorrect	Crushing	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing	Drawing	Finish
Doc/Data	Offset/Setup	Cuffs	Contamination	Countersink	Cut Too Short	Heat Treat	Out of Sequence	Off-set	Part Moved	Misread	Turning Sequence
Equip/Tooling	Supplier	Crimp/Kink/Ripple/Wave	Instructions Incomplete/Unclear	Drill Holes	Misaligned/off center						
Handling/Pre	Training	Wave/Twist in Tube									
Material	Use for Testing	Marks/Chatter									
Internal Transport	Poor Information										
Tribal Knowledge	Rushing										
LOA	Product Improvement										
Substation	Process Improvement										
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
OTHER : _____											

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017
Required Date: 1/16/2017
Start Qty: 1.00
Required Qty: 1.00

MS27039-1-19

Purchased

No

240 Each

233.0000 4 4

MS27039-1-19

Screw

JAN 25 2017

DAS
9-89

Location

Loc Qty

Loc Code

280

153

m136182

153

GA

80

m134134

80

D3024-1

Manufactured

No

240 Each

33.0000

3 3

D3024-1

Spacer

JAN 25 2017

DAS
9-89

Location

Loc Qty

Loc Code

ST015

33

148104

8

152203

25

MS27039-1-17

Purchased

No

240 Each

162.0000

1 1

MS27039-1-17

Screw (601.1954)

JAN 25 2017

DAS
9-89

Location

Loc Qty

Loc Code

GA

150

m127831

150

ST280

12

120142

12

MS24693-S49

Purchased

No

240 Each

205.0000

4 4

MS24693-S49

Screw

JAN 25 2017

DAS
9-89

Location

Loc Qty

Loc Code

ST286

205

m130835

205

Wednesday, December 14, 2016 10:51:38 AM

Shop Packet Print

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS											
Date : _____		Suspected Unapproved		Skid-tube		Cross tube		Water Jet		Engineering					
Step #: _____		Use-as-is		Machining		Small Fab		Prod. Eng. Coord.		Quality					
Description Work Order Deviation		QTY Effective : _____		Thermoforming		Finishing		Rec/Store/Packaging		Other					
Disposition		MRB (QS1042) Approval		Large Fab		Composite		Supplier							
Completed By															
Lead hand / Supervisor Approval Verification															
QC / QA Coordinator Approval															
Fault Category															
Root Cause				Temperature/Cure				Power Loss/Surge				Positioned Wrong			
Environment				Set-up				Folio/Program				Outside Dimensions			
Design				BOM/Route				Grain				Over/Under tolerance			
Doc/Data				Broken/Damage/Defect				Weld				Part Incorrect			
Equip/Tooling				Inspection Incomplete/Unqualified				Wrong Stock Pulled				Part Lost/Missing			
Handling/Pre				Contamination				Out of Sequence				Part Moved			
Material				Countersink				Off-set				Drawing			
Internal Transport				Cut Too Short				Mislabeled				Finish			
Tribal Knowledge				Instructions Incomplete/Unclear				Fit/Function				Misread			
LOA				Drill Holes				Misaligned/off center				Turning Sequence			
Substation															
Past Expiry Date															
Misidentified															
OTHER : _____															

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 134485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017
Required Date: 1/16/2017
Start Qty: 1.00
Required Qty: 1.00

NAS1149D0332J

Purchased

No

240 Each

1,619,000 30 30

NAS1149D0332.J

Washer

JAN 25 2017

DAS
6
9-89

Location

Loc Qty

Loc Code

HP001

m134848

100

GA

m134848

146

ST260a

m136015

1200

ST264

m135672

173

240 Each

337,0000

8 8

No

MS20600-AD4W5

Purchased

MS20600-AD4W5
Blind Rivet

**

JAN 25 2017

DAS
6
9-89

Location

Loc Qty

Loc Code

ST308

m132769

200

WA004

m131618

137

m132640

3

Wednesday, December 14, 2016 10:51:38 AM

Shop Packet Print

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS											
Part No. _____		Rework Scrap Use-as-is		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other					
NCR No. _____		Suspected Unapproved		Large Fab		Finishing		Prod. Eng. Coord.		Other					
Date : _____		Step #:		QTY Effective :		MRB (QSI042) Approval									
Description Work Order Deviation				Disposition											
												Completed By			
												Lead hand / Supervisor Approval Verification		QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY											
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong										
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions										
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance										
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect										
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing										
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved										
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing										
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish										
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread										
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence										
Past Expiry Date	Manufacturing Process														
Misidentified	Past Due														
OTHER :															

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017

Start Qty: 1.00

Required Date: 1/16/2017
Required Qty: 1.00

MS21042L3 Purchased No

240 Each 1,625.000 17 17

MS21042L3

Nut

Location Loc Qty Loc Code

600

M136192

600

FP001

100

m135945

100

GA

176

m134360

108

m135135

68

ST303

749

m135945

149

M136044

600

240

Each

592.0000

17

17

NAS1149D0432J Purchased No

NAS1149D0432J
WASHER

JAN 25 2017

DAS 6 9-82

Location Loc Qty Loc Code

GA

24

m131026

24

ST264

568

m134676

568

Manufactured No

105

Each

3.0000

1

1

D5159-041
Seat Back Brace Assembly

17-12

Location Loc Qty Loc Code

ST358

3

154061

147711

1

152342

2

Wednesday, December 14, 2016 10:51:38 AM

Shop Packet Print

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only



Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS											
Part No. _____		Rework Scrap Use-as-is		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other					
NCR No. _____		Suspected Unapproved		Large Fab		Finishing		Prod. Eng. Coord.		Other					
Date: _____		Step #:		QTY Effective :		MRB (QS1042) Approval									
Description Work Order Deviation				Disposition											
												Completed By			
												Lead hand / Supervisor Approval Verification		QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY											
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong										
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions										
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance										
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect										
Handling/Pre	Training	Grimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing										
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved										
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing										
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish										
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread										
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence										
Past Expiry Date	Manufacturing Process														
Misidentified	Past Due														
				OTHER :											

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017
Start Qty: 1.00
Required Date: 1/16/2017
Required Qty: 1.00

AN4-14A

Purchased

No

240

Each

360.0000

2

2

AN4-14A

Bolt

Location

RG

122141

Loc Qty

5

Loc Code

5

JAN 25 2017

DAS
6
9-89

over003

M135840

330

M135945

100

M136192

200

ST344

25

M135671

5

M135840

20

D3031-1

Manufactured

No

240

Each

8.0000

2

2

D3031-1

Loop

Location

GA

134318

8

151288

2

AN3-12A

Purchased

No

240

Each

387.0000

3

3

AN3-12A

Bolt

Location

over003

153854

Loc Qty

206

Loc Code

206

ST349

m133064

181

m135603

14

167

3

JAN 25 2017

DAS
6
9-89

JAN 25 2017

DAS
6
9-89

17/01/25 DAS 36

100%

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Work Order: _____	Rework	Skid-tube	Cross tube	Water Jet	Engineering
Part No. _____	Scrap	Machining	Small Fab	Prod. Eng. Coord.	Quality
NCR No. _____	Use-as-is	Thermoforming	Finishing	Rec/Store/Packaging	Other
Date : _____	Suspected Unapproved	Large Fab	Composite	Supplier	
Step #: _____		QTY Effective : _____			
Description Work Order Deviation		Disposition			
Completed By		MRB (QS1042) Approval			
Lead hand / Supervisor Approval Verification					
QC / QA Coordinator Approval					

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/ Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
OTHER : _____											

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017
Start Qty: 1.00
Required Date: 1/16/2017
Required Qty: 1.00

MS21042L4

Purchased No

240 Each

2,532.000 8 8

MS21042L4

**

Nut

Location

Loc Qty

Loc Code

FP001

m133363

18

GA

m135058

18

OVER007

m136182

m136295

1500

500

1000

822

322

500

ST303

m135864

m135979

105

Each

7.0000

1

1

D2199-31

Manufactured No

D2199-31

Strut Details

**

Location

Loc Qty

Loc Code

ST352

148110

7

7

Each

50.0000

2

2

MS27039-1-20

Purchased No

MS27039-1-20

Screw

Location

Loc Qty

Loc Code

ST280

124326

50

50

2

2

JAN 25 2017

6 889

GA 174-12

JAN 25 2017

6 889

H:/FORMS/Quality Assurance/approved QA/NCRWO Rev I

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

154485
D5162-041

Start Date: 1/9/2017 Required Date: 1/16/2017

Start Qty: 1.00 Required Qty: 1.00

MS27039-4-21 Purchased No

240 Each

73.0000

2 2

MS27039-4-21

**

DAS

Screw

9-89

JAN 25 2017

Location
ST279

Loc Qty
73

Loc Code

m132803
m135774

13
60

MS27039-1-18

Purchased

No

240 Each

1,668.000

3

3

MS27039-1-18

**

DAS

Screw

9-89

JAN 25 2017

Location
GA

Loc Qty
245

Loc Code

123522
124326

45
200

over006

124326

1200

ST280

223

124326

223

D5159-045

Manufactured

No

105

Each

4.0000

1

1

D5159-045

Seat Rib Assembly

**

Location
ST358

Loc Qty
4

Loc Code

138038
146076
153151

1
1
2

1

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ ☐ Scrap ☐ ☐ Use-as-is ☐ ☐ Suspected Unapproved ☐ ☐		AGAINST DEPARTMENT/PROCESS Cross tube ☐ ☐ ☐ ☐ Small Fab ☐ ☐ ☐ ☐ Finishing ☐ ☐ ☐ ☐ Composite ☐ ☐ ☐ ☐		Water Jet ☐ ☐ ☐ ☐ Prod. Eng. Coord. ☐ ☐ ☐ ☐ Rec/Store/Packaging ☐ ☐ ☐ ☐ Supplier ☐ ☐ ☐ ☐		Engineering ☐ ☐ ☐ ☐ Quality ☐ ☐ ☐ ☐ Other ☐ ☐ ☐ ☐		MRB (QS1042) Approval _____	
Date : _____		Step #: _____		QTY Effective : _____							
Description Work Order Deviation				Disposition							
								Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER : _____									

Picklist Print

Wednesday, December 14, 2016 10:51:38 AM

Work Order ID: 154485

154485

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 1/9/2017

Required Date: 1/16/2017

Start Qty: 1.00

Required Qty: 1.00

AN970-4

Purchased

No

240

Each

90.0000

1

1

AN970-4

**

Washer

JAN 25 2017 9:48

DAS 6

Location

Loc Qty

Loc Code

ST260a

50

m135390

0

m136044

50

ST321

40

m135600

40

1

**DART**

DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. D3016	REV. A SHEET 1 OF 3
DATE 01.05.18		TITLE SEAT FRAME ASSEMBLY	SCALE NTS
A	01.05.18	NEW ISSUE	

QTY	PART NUMBER	DESCRIPTION	MATERIAL
X	D3016-041	SEAT FRAME ASSEMBLY	N/A
1	D3016-1	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
2	D3016-3	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
1	D3016-5	TUBE	AISI 4130N TUBE, Ø0.50 DIA x 0.049 WALL (M4130N-T0500W049)
2	D3016-7	TUBE	AISI 4130N TUBE, Ø0.50 DIA x 0.049 WALL (M4130N-T0500W049)
1	D3016-9	SADDLE	AISI 4130N TUBE, Ø1.00 DIA x 0.120 WALL (M4130N-T1000W120)
1	D3016-11	SADDLE	AISI 4130N TUBE, Ø1.00 DIA x 0.120 WALL (M4130N-T1000W120)
1	D3016-13	BRACKET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
1	D3016-15	GUSSET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
1	D3016-17	GUSSET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
2	D3020-1	FITTING	N/A

NOTES

- 1) WELD PER DART QSI 004
- 2) ON SHEET METAL PARTS, BREAK ALL UNMARKED CORNERS 0.020-0.040
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 154485

*rec
10/1
14/1/14*

DEO ATTACHED**RELEASED**
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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

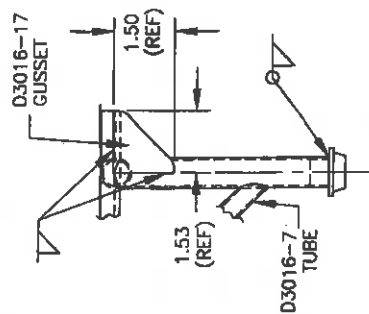
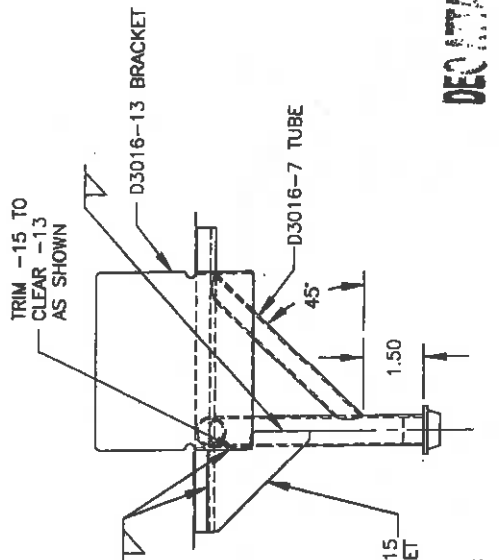
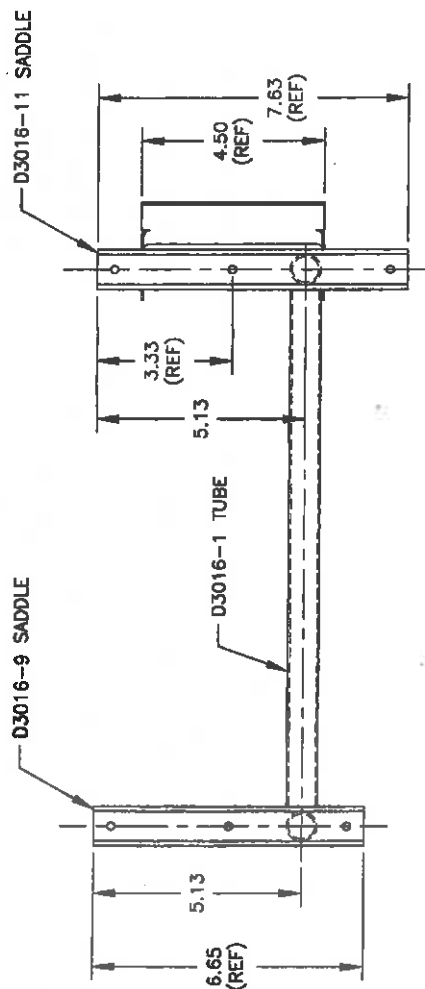


QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS									
Part No. _____		Rework ☐	Scrap ☐	Use-as-is ☐	Suspected Unapproved ☐	Skid-tube Machining ☐	Thermoforming large Fab ☐	Cross tube Small Fab ☐	Finishing Composite ☐	Water Jet ☐	Prod. Eng. Coord. ☐	Rec/Store/Packaging Supplier ☐	Engineering Quality Other ☐
NCR No. _____													
Date: _____	Step #: _____	QTY Effective: _____		MRB (QS1042) Approval									
Description Work Order Deviation				Disposition				Completed By					
								Lead hand / Supervisor Approval Verification					
								QC / QA Coordinator Approval					
Root Cause				FAULT CATEGORY									
Environment ☐	No Re-verification ☐	Pressure/Forced Bending ☐	Temperature/Cure Set-up ☐	Power Loss/Surge ☐	Positioned Wrong ☐								
Design ☐	Operator ☐	Centre Not Concentric ☐	BOM/Route ☐	Folio/Program ☐	Outside Dimensions ☐								
Doc/Data ☐	Offset/Setup ☐	Cracks ☐	Broken/Damage/Defect ☐	Grain ☐	Over/Under tolerance ☐								
Equip/Tooling ☐	Supplier ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Weld ☐	Part Incorrect ☐								
Handling/Pre Material ☐	Training ☐	Cuffs ☐	Contamination ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐								
Internal Transport ☐	Use for Testing ☐	Crushing ☐	Counter-sink ☐	Out of Sequence ☐	Part Moved ☐								
Tribal Knowledge ☐	Poor Information ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Drawing ☐								
LOA ☐	Rushing ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Finish ☐								
Substation ☐	Product Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Mistread ☐								
Past Expiry Date ☐	Process Improvement ☐				Turning Sequence ☐								
Misidentified ☐	Manufacturing Process ☐												
				OTHER: ☐									

D3016-041 SEAT FRAME ASSEMBLY



DEC 1964

RELEASED

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CHECKED		APPROVED		DRAWING NO. D3016	
DATE		01.05.18		SHEET 2 OF 3	
				SCALE	
				1:3	
				TITLE	
				SEAT FRAME ASSEMBLY	

DOA: _____ Date: _____

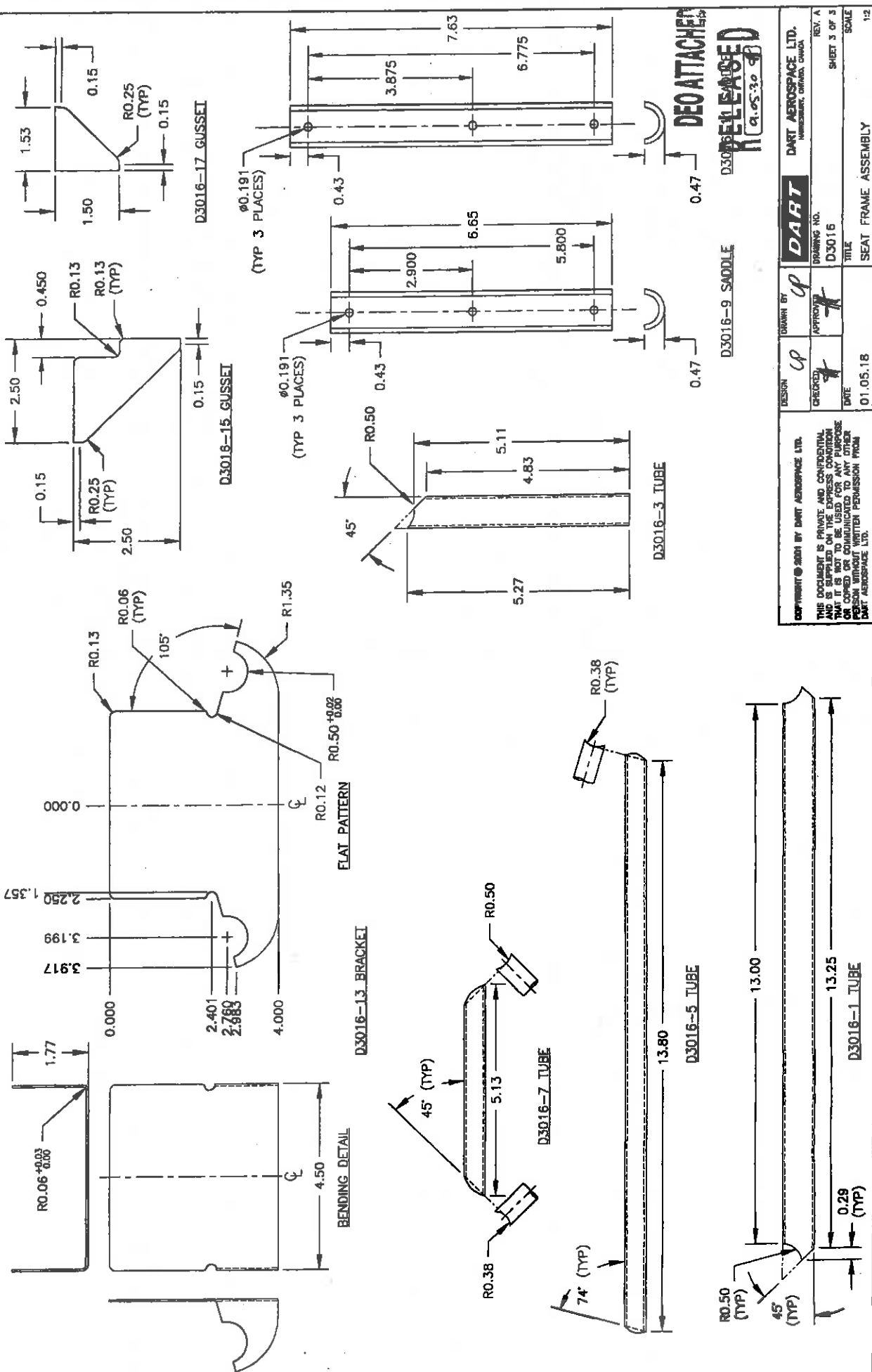
WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS							
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐		Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐	
NCR No. _____		Suspected Unapproved ☐		QTY Effective : _____							
Date : _____		Step # : _____		MRB (QS1042) Approval ☐							
Description Work Order Deviation				Disposition				Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			
Root Cause				FAULT CATEGORY							
Environment: ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐		Power Loss/Surge ☐		Positioned Wrong ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐		Folio/Program ☐		Outside Dimensions ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐		Grain ☐		Over/Under tolerance ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐		Weld ☐		Part Incorrect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐		Wrong Stock Pulled ☐		Part Lost/Missing ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐		Out of Sequence ☐		Part Moved ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐		Off-set ☐		Drawing ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐		Mislabeled ☐		Finish ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐		Fit/Function ☐		Mistread ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐		Misaligned/off center ☐		Turning Sequence ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____							
Misidentified ☐		Past Due ☐									



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date: _____		Step #: _____		QTY Effective: _____		MRB (QS1042) Approval ☐	
Description Work Order Deviation				Disposition			
Root Cause				FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____	
QC / QA Coordinator Approval				Completed By			
Lead hand / Supervisor Approval Verification				Lead hand / Supervisor Approval Verification			

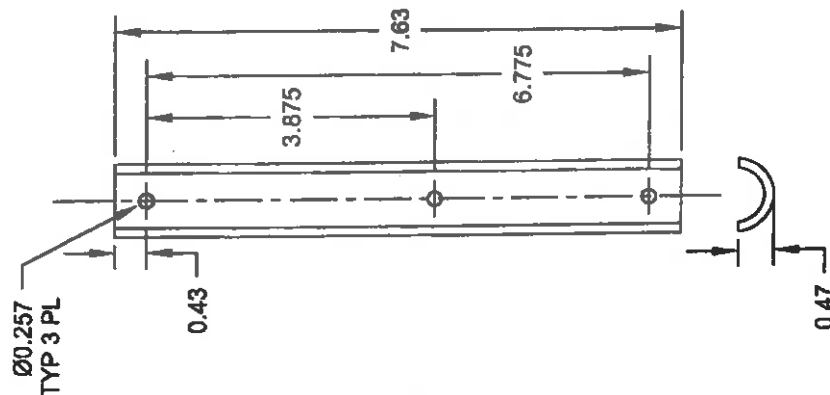
DRAWING NO. D3016	TITLE SEAT FRAME ASSEMBLY	REV. A	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D3016-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN 1	CHECKED UP		MFG. APPR. [Signature]	APPROVED [Signature]	DE APPR. [Signature]	
DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	

PURPOSE:
TO REVISE D3016-11 SADDLE'S HOLE SIZES

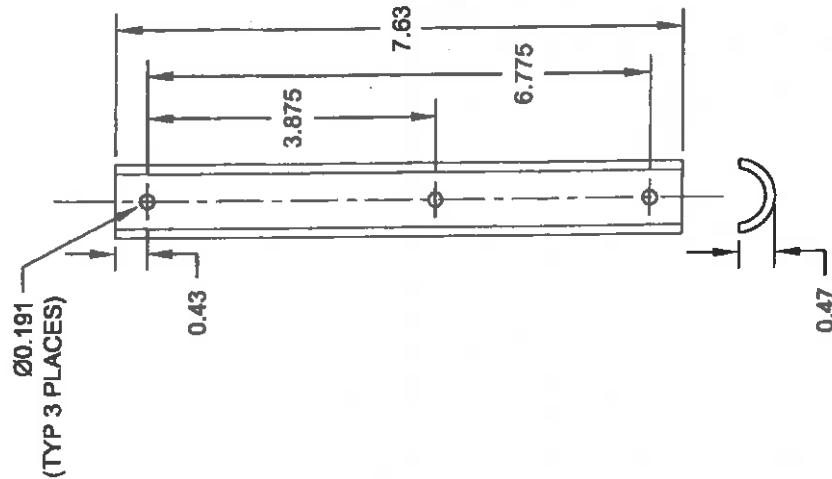
CHANGE:

DETAIL D3016-11 SADDLE (SHEET 3): Ø0.257 TYP 3 PL WAS Ø0.191 (TYP 3 PLACES) AS SHOWN:

IS:



WAS:

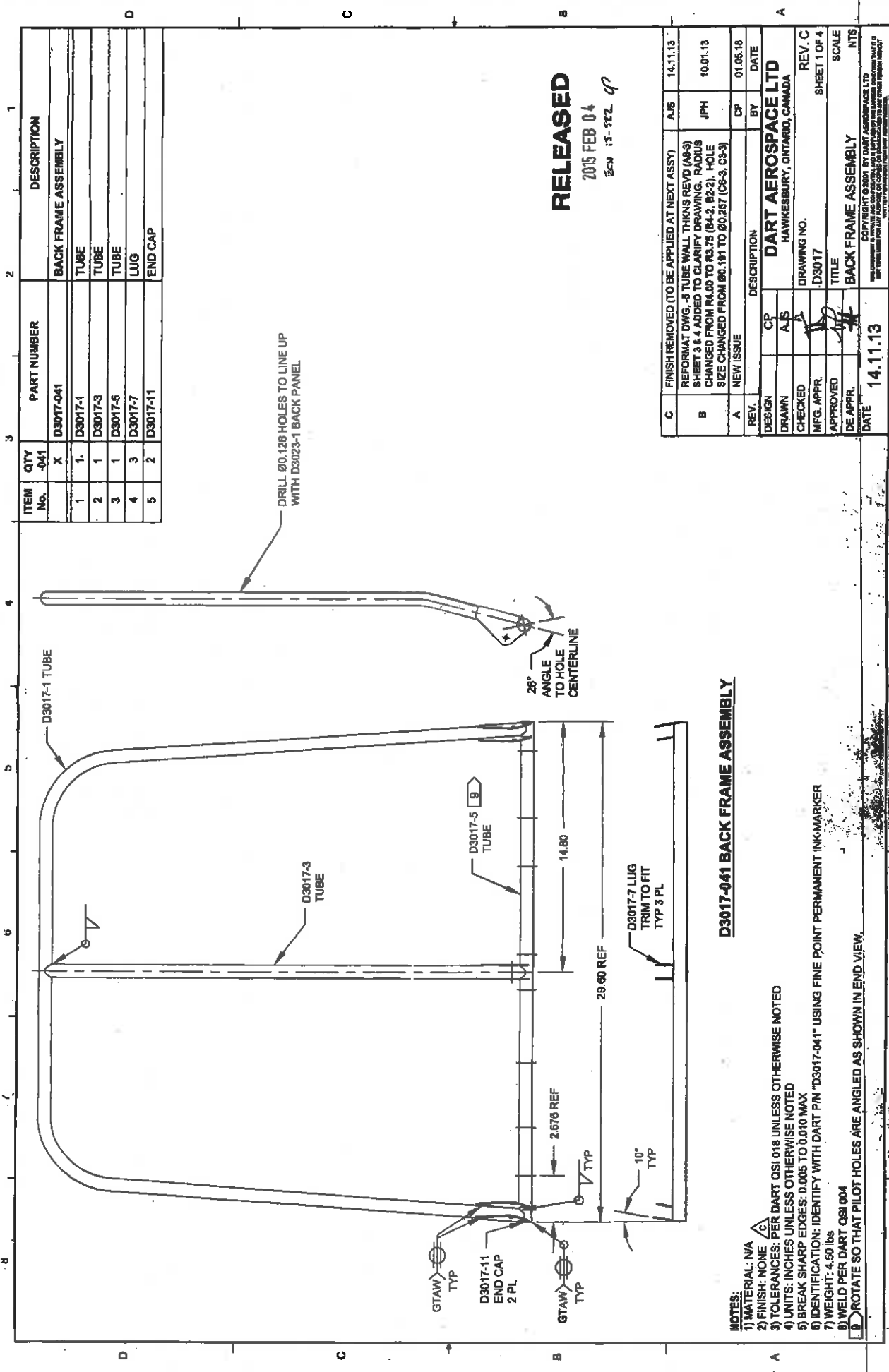


D3016-11 SADDLE

D3016-11 SADDLE

Work Order update only

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ ☐ Scrap ☐ ☐ Use-as-is ☐ ☐ Suspected Unapproved ☐ ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ ☐ Machining ☐ ☐ Thermoforming ☐ ☐ Large Fab ☐ ☐ Cross tube ☐ ☐ Small Fab ☐ ☐ Finishing ☐ ☐ Composite ☐ ☐ Water Jet ☐ ☐ Prod. Eng. Coord. ☐ ☐ Rec/Store/Packaging ☐ ☐ Supplier ☐ ☐			
Date : _____		Step #: _____		QTY Effective : _____			
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval			
Root Cause Environment ☐ ☐ Design ☐ ☐ Doc/Data ☐ ☐ Equip/Tooling ☐ ☐ Handling/Pre ☐ ☐ Material ☐ ☐ Internal Transport ☐ ☐ Tribal Knowledge ☐ ☐ LOA ☐ ☐ Substation ☐ ☐ Past Expiry Date ☐ ☐ Misidentified ☐ ☐		FAULT CATEGORY No Re-verification ☐ ☐ Operator ☐ ☐ Offset/Setup ☐ ☐ Supplier ☐ ☐ Training ☐ ☐ Use for Testing ☐ ☐ Poor Information ☐ ☐ Rushing ☐ ☐ Product Improvement ☐ ☐ Process Improvement ☐ ☐ Manufacturing Process ☐ ☐ Past Due ☐ ☐		Pressure/Forced ☐ ☐ Bending ☐ ☐ Centre Not Concentric ☐ ☐ Cracks ☐ ☐ Crimp/Kink/Ripple/Wave ☐ ☐ Cuffs ☐ ☐ Crushing ☐ ☐ Heat Treat ☐ ☐ Wave/Twist in Tube ☐ ☐ Marks/Chatter ☐ ☐ Temperature/Cure ☐ ☐ Set-up ☐ ☐ BOM/Route ☐ ☐ Broken/Damage/Defect ☐ ☐ Inspection Incomplete/Unqualified ☐ ☐ Contamination ☐ ☐ Countersink ☐ ☐ Cut Too Short ☐ ☐ Instructions Incomplete/Unclear ☐ ☐ Drill Holes ☐ ☐ Power Loss/Surge ☐ ☐ Folio/Program ☐ ☐ Grain ☐ ☐ Weld ☐ ☐ Wrong Stock Pulled ☐ ☐ Out of Sequence ☐ ☐ Off-set ☐ ☐ Mislabeled ☐ ☐ Fit/Function ☐ ☐ Misaligned/off center ☐ ☐		Positioned Wrong ☐ ☐ Outside Dimensions ☐ ☐ Over/Under tolerance ☐ ☐ Part Incorrect ☐ ☐ Part Lost/Missing ☐ ☐ Part Moved ☐ ☐ Drawing ☐ ☐ Finish ☐ ☐ Misread ☐ ☐ Turning Sequence ☐ ☐	
OTHER : _____							



ITEM No.	QTY	PART NUMBER	DESCRIPTION
1	X	D3017-041	BACK FRAME ASSEMBLY
2	1	D3017-1	TUBE
3	1	D3017-3	TUBE
4	3	D3017-5	TUBE
5	2	D3017-7	LUG
6	2	D3017-11	END CAP

DRILL Ø0.128 HOLES TO LINE UP WITH D3023-1 BACK PANEL

28° ANGLE TO HOLE CENTERLINE

RELEASED
2015 FEB 04
ECN 15-922 q

D3017-041 BACK FRAME ASSEMBLY

- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3017-041" USING FINE POINT PERMANENT INK-MARKER
 - 7) WEIGHT: 4.50 lbs
 - 8) WELD PER DART QSI 004
 - 9) ROTATE SO THAT PILOT HOLES ARE ANGLED AS SHOWN IN END VIEW.

REV.	DESCRIPTION	DATE
A	NEW ISSUE	01.05.18
B	REFORMAT DWG - 5 TUBE WALL THICKS REVD (A5-3) SHEET 3 & 4 ADDED TO CLARIFY DRAWING. RADIUS CHANGED FROM R4.00 TO R3.75 (R4.2, B2.2). HOLE SIZE CHANGED FROM Ø0.101 TO Ø0.128 (C8-3, C3-3)	10.01.13
C	FINISH REMOVED (TO BE APPLIED AT NEXT ASSY)	14.11.13

DESIGN	CP	BY	DATE
DRAWN	AJS		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			

DATE	14.11.13
SCALE	NTS
TITLE	BACK FRAME ASSEMBLY
DRAWING NO.	D3017
REV. C	SHEET 1 OF 4

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

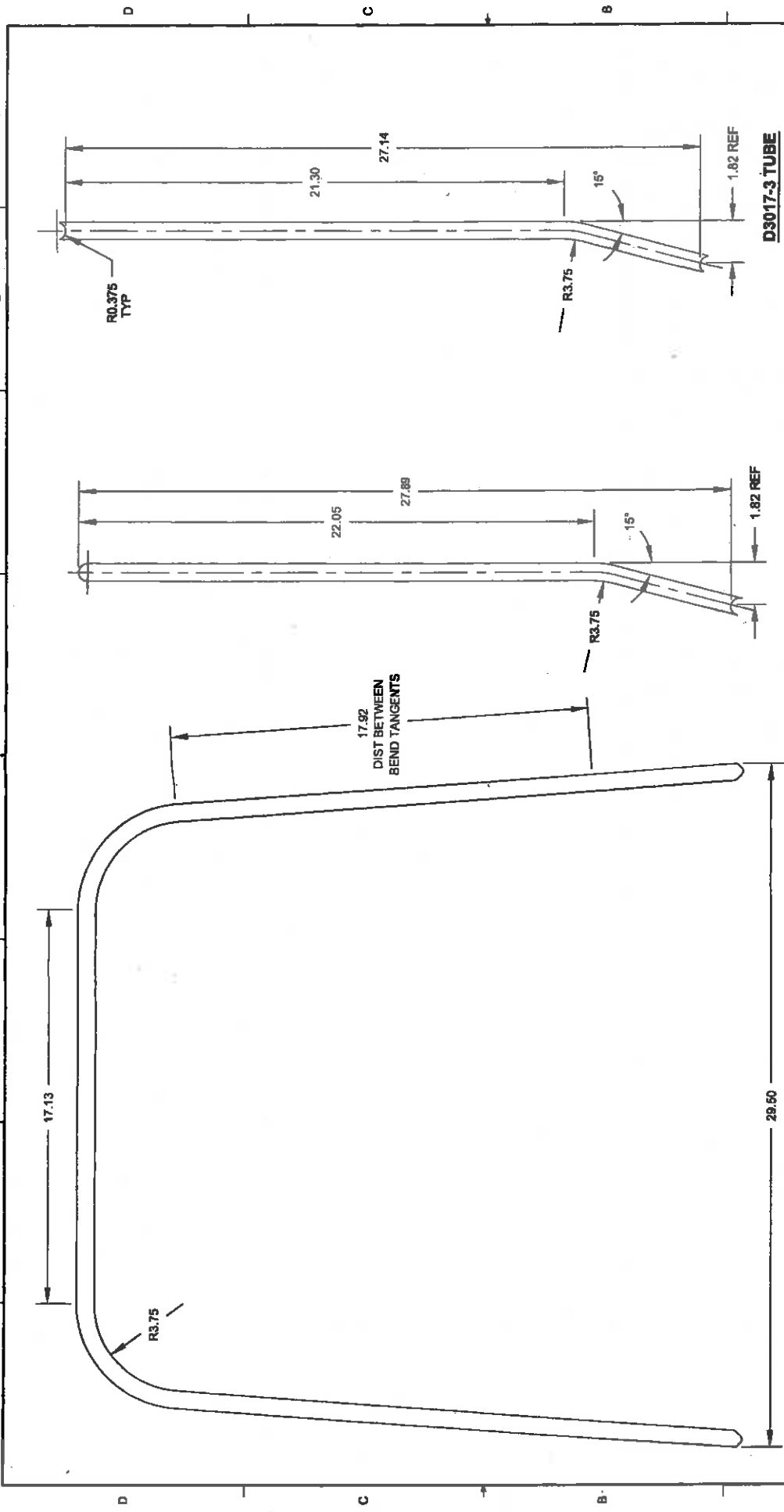


QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION				AGAINST DEPARTMENT/PROCESS															
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐				Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐				Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐				Engineering ☐ Quality ☐ Other ☐			
NCR No. _____		Step #: _____				QTY Effective: _____				Disposition				MRB (QS1042) Approval							
Date: _____		Description Work Order Deviation												Completed By							
														Lead hand / Supervisor Approval Verification							
														QC / QA Coordinator Approval							
Root Cause		FAULT CATEGORY																			
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐										
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐										
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐										
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐										
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐										
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐										
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐										
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐										
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐										
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐										
Past Expiry Date	☐	Manufacturing Process	☐		☐		☐		☐		☐										
Misidentified	☐	Past Due	☐	OTHER :	☐		☐		☐		☐										

1 2 3 4 5 6 7 8



D3017-1 TUBE

D3017-3 TUBE

- NOTES:**
- 1) MATERIAL: AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: D3017-1: 2.38 lbs; D3017-3: 0.84 lbs.

RELEASED
2015 FEB 04

DESIGN	CP	DART AEROSPACE LTD
DRAWN	AJS	HAWKSBURY, ONTARIO, CANADA
CHECKED	1	REV. C
MFG. APPR.	1	DRAWING NO. D3017
APPROVED	1	SHEET 2 OF 4
DE APPR.	1	TITLE BACK FRAME ASSEMBLY
DATE	14.11.13	SCALE NTS

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DQA: _____ Date: _____

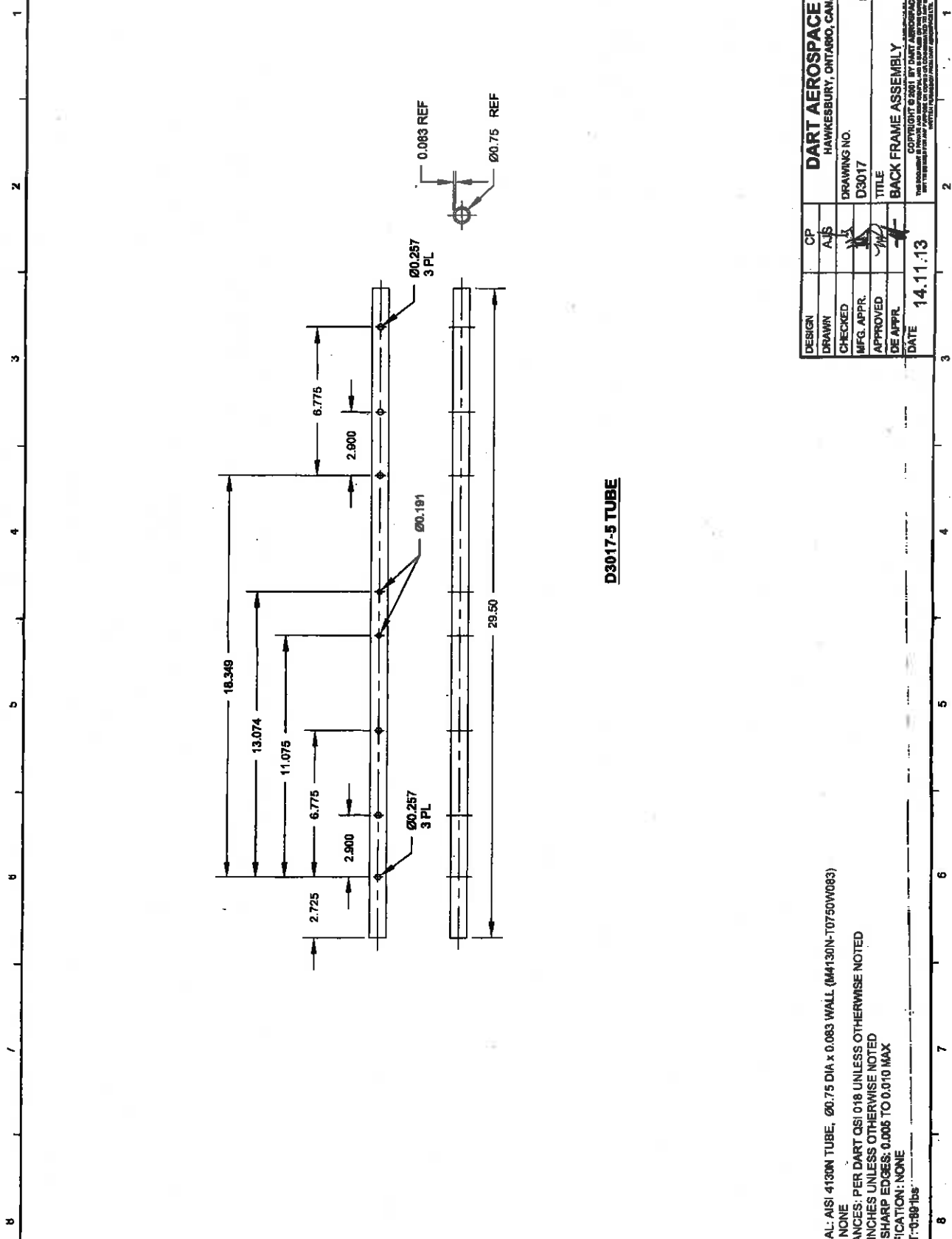
WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION				AGAINST DEPARTMENT/PROCESS																																																					
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐				Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐				Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐				Engineering ☐ Quality ☐ Other ☐																																									
NCR No. _____		Suspected Unapproved ☐				QTY Effective : _____				Disposition																																																	
Date : _____		Step #: _____		MRB (QS1042) Approval																																																							
Description Work Order Deviation																				Completed By																																							
																				Lead hand / Supervisor Approval Verification																																							
																				QC / QA Coordinator Approval																																							
Root Cause										FAULT CATEGORY																																																	
Environment ☐										Pressure/Forced ☐										Temperature/Cure ☐										Power Loss/Surge ☐										Positioned Wrong ☐																			
Design ☐										No Re-verification ☐										Bending ☐										Set-up ☐										Folio/Program ☐										Outside Dimensions ☐									
Doc/Data ☐										Operator ☐										Centre Not Concentric ☐										BOM/Route ☐										Grain ☐										Over/Under tolerance ☐									
Equip/Tooling ☐										Offset/Setup ☐										Cracks ☐										Broken/Damage/Defect ☐										Weld ☐										Part Incorrect ☐									
Handling/Pre ☐										Supplier ☐										Crimp/Kink/Ripple/Wave ☐										Inspection Incomplete/Unqualified ☐										Wrong Stock Pulled ☐										Part Lost/Missing ☐									
Material ☐										Training ☐										Cuffs ☐										Contamination ☐										Out of Sequence ☐										Part Moved ☐									
Internal Transport ☐										Use for Testing ☐										Crushing ☐										Countersink ☐										Off-set ☐										Drawing ☐									
Tribal Knowledge ☐										Poor Information ☐										Heat Treat ☐										Cut Too Short ☐										Mislabeled ☐										Finish ☐									
LOA ☐										Rushing ☐										Wave/Twist in Tube ☐										Instructions Incomplete/Unclear ☐										Fit/Function ☐										Misread ☐									
Substation ☐										Product Improvement ☐										Marks/Chatter ☐										Drill Holes ☐										Misaligned/off center ☐										Turning Sequence ☐									
Past Expiry Date ☐										Process Improvement ☐										OTHER : _____																																							
Misidentified ☐										Manufacturing Process ☐																																																	



D3017-5 TUBE

- NOTES:
- 1) MATERIAL: AISI 4130N TUBE, $\varnothing 0.75$ DIA x 0.083 WALL (M4130N-T0750W083)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.008 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.96 lbs

DESIGN	CP	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D3017	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		BACK FRAME ASSEMBLY	NTS
DATE	14.11.13	COPYRIGHT © 2003 BY DART AEROSPACE LTD. THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING.	

DQA: _____ Date: _____

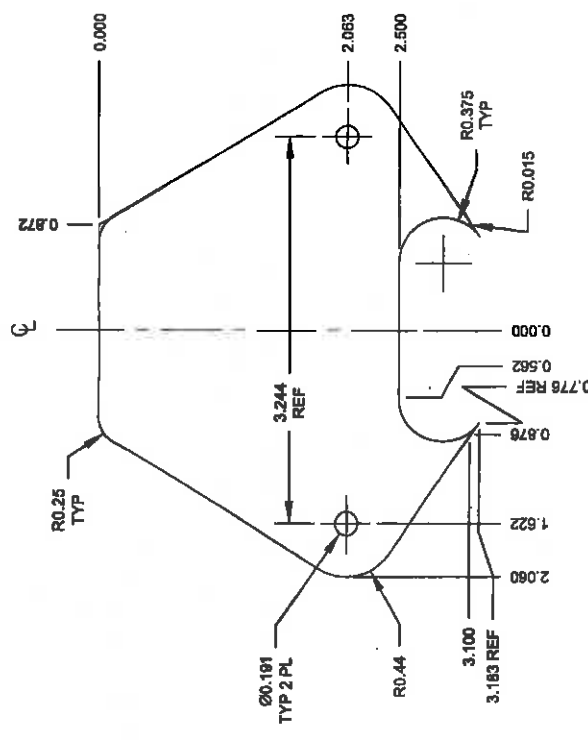
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

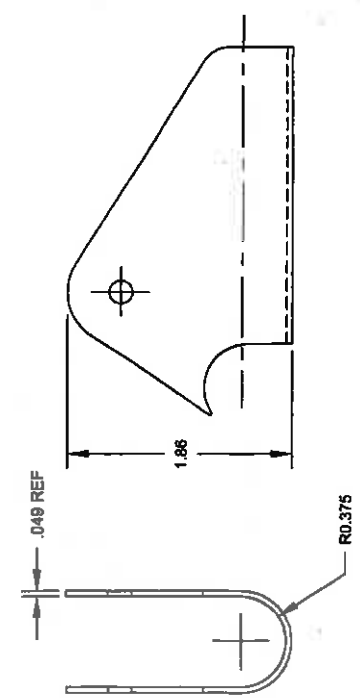
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS																			
Date: _____		Step #: _____		QTY Effective: _____		MRB (QS1042) Approval																	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification															
Root Cause Environment: ☐ Design: ☐ Doc/Data: ☐ Equip/Tooling: ☐ Handling/Pre: ☐ Material: ☐ Internal Transport: ☐ Tribal Knowledge: ☐ LOA: ☐ Substation: ☐ Past Expiry Date: ☐ Misidentified: ☐				FAULT CATEGORY No Re-verification: ☐ Operator: ☐ Offset/Setup: ☐ Supplier: ☐ Training: ☐ Use for Testing: ☐ Poor Information: ☐ Rushing: ☐ Product Improvement: ☐ Process Improvement: ☐ Manufacturing Process: ☐ Past Due: ☐				Pressure/Forced: ☐ Bending: ☐ Centre Not Concentric: ☐ Cracks: ☐ Crimp/Kink/Ripple/Wave: ☐ Cuffs: ☐ Crushing: ☐ Heat Treat: ☐ Wave/Twist in Tube: ☐ Marks/Chatter: ☐				Temperature/Cure: ☐ Set-up: ☐ BOM/Route: ☐ Broken/Damage/Defect: ☐ Inspection Incomplete/Unqualified: ☐ Contamination: ☐ Countersink: ☐ Cut Too Short: ☐ Instructions Incomplete/Unclear: ☐ Drill Holes: ☐				Power Loss/Surge: ☐ Folio/Program: ☐ Grain: ☐ Weld: ☐ Wrong Stock Pulled: ☐ Out of Sequence: ☐ Off-set: ☐ Mislabeled: ☐ Fit/Function: ☐ Misaligned/off center: ☐				Positioned Wrong: ☐ Outside Dimensions: ☐ Over/Under tolerance: ☐ Part Incorrect: ☐ Part Lost/Missing: ☐ Part Moved: ☐ Drawing: ☐ Finish: ☐ Misread: ☐ Turning Sequence: ☐			
OTHER: ☐																							

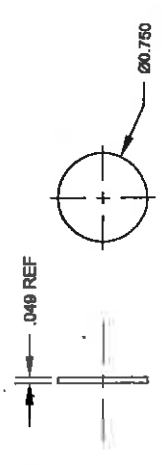
1 2 3 4 5 6 7 8



D3017-7F FLAT PATTERN
PART IS SYMMETRIC
ABOUT CENTERLINE



D3017-7 LUG
BENDING DETAIL
MAKE FROM D3017-7F



D3017-11 END CAP

- NOTES:**
- 1) MATERIAL: AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: -Z-0.12 lbs.-11: 0.01 lbs.

RELEASED
2015 FEB 04

DESIGN	CP	DART AEROSPACE LTD
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA
CHECKED	AS	DRAWING NO. D3017
MFG. APPR.		REV. C SHEET 4 OF 4
APPROVED		TITLE BACK FRAME ASSEMBLY
DE APPR.		SCALE NTS
DATE	14.11.13	

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

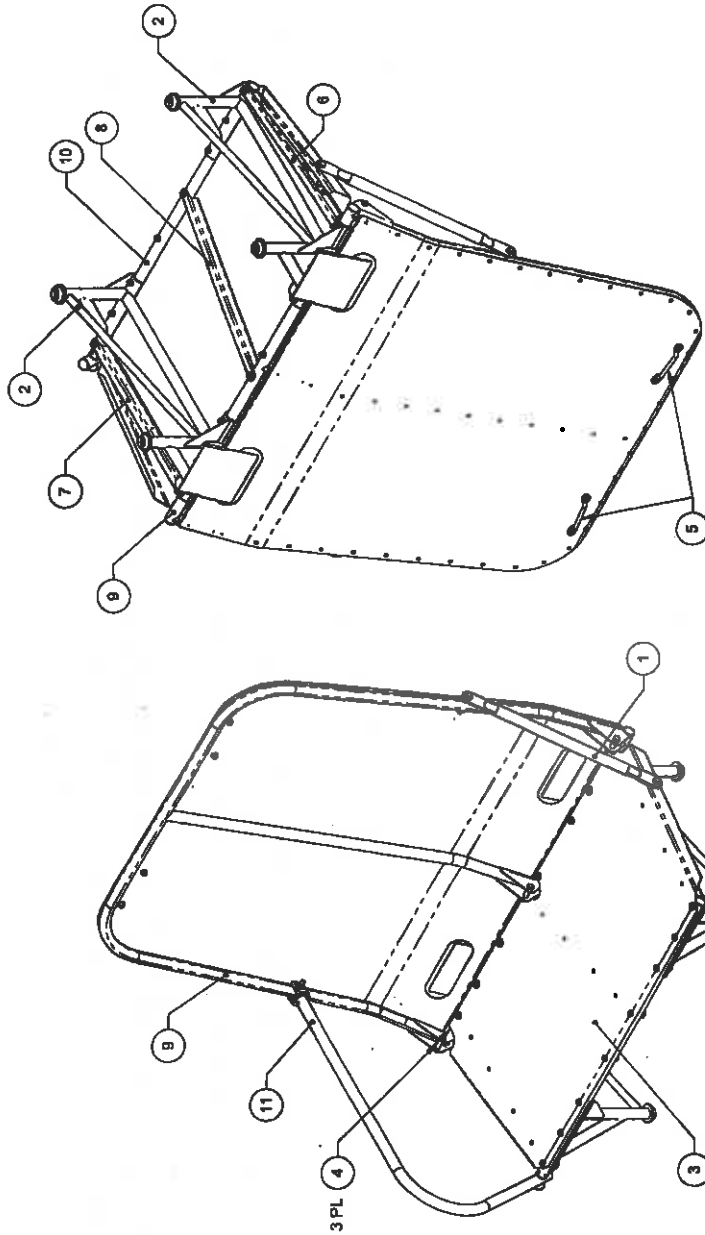


QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS							
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐		Skid-tube Machining ☐ Thermoforming ☐ Large Fab ☐		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐	
NCR No. _____		Suspected Unapproved ☐		QTY Effective : _____						MRB (QS1042) Approval	
Date : _____		Step # : _____		Disposition							
Description Work Order Deviation								Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐		Power Loss/Surge ☐		Positioned Wrong ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐		Folio/Program ☐		Outside Dimensions ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐		Grain ☐		Over/Under tolerance ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐		Weld ☐		Part Incorrect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐		Wrong Stock Pulled ☐		Part Lost/Missing ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐		Out of Sequence ☐		Part Moved ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐		Off-set ☐		Drawing ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐		Misabeled ☐		Finish ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐		Fit/Function ☐		Misread ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐		Misaligned/off center ☐		Turning Sequence ☐	
Past Expiry Date ☐		Manufacturing Process ☐									
Misidentified ☐		Past Due ☐									
				OTHER : _____							

ITEM	QTY	PIN	DESCRIPTION
1	1	D5162-041	SEAT STRUCTURE ASSEMBLY
2	1	D2199-31	STRUT
3	1	D3018-041	SEAT FRAME ASSEMBLY
4	3	D3022-1	SEAT PAN
5	2	D3024-1	SPACER
6	2	D3031-1	LOOP
7	1	D5159-041	SEAT BACK BRACE ASSY
8	1	D5159-043	SEAT BACK BRACE ASSY
9	1	D5162-051	SEATBACK ASSEMBLY
10	1	D5189-041	TUBE ASSEMBLY
11	1	D5189-043	ARMREST ASSEMBLY
12	3	AN3-12A	BOLT
13	1	AN4-6A	BOLT
14	1	AN4-4A	BOLT
15	2	AN4-14A	BOLT
16	1	AN870-4	WASHER
17	4	MS20600AD4W4	RIVET, BLIND
18	8	MS20600AD4W5	RIVET, BLIND
19	17	MS21042L3	NUT, SELF-LOCKING
20	8	MS21042L4	NUT, SELF-LOCKING
21	4	MS24683-848	SCREW, CSK 100°
22	1	MS27039-1-17	SCREW, PAN-HEAD
23	3	MS27039-1-18	SCREW, PAN-HEAD
24	4	MS27039-1-19	SCREW, PAN-HEAD
25	2	MS27039-1-20	SCREW, PAN-HEAD
26	2	MS27039-4-21	SCREW, PAN-HEAD
27	4	MS27039-4-20	SCREW, PAN-HEAD
28	17	NAS1149D0432J	WASHER
29	30	NAS1149D0332J	WASHER
30	2	NAS43DD4-16FC	SPACER



D5162-041 SEAT STRUCTURE ASSEMBLY

GENERAL NOTES:
1) MATERIAL: N/A
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: N/A
7) WEIGHT: 19.1 lbs

RELEASED
2015 FEB 04
E200 05-322- 9

A		NEW ISSUE		DESCRIPTION		DATE	
REV.		AJS	BY	DATE		14.10.03	
DESIGN	AJS	DART AEROSPACE LTD					
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA					
CHECKED	AP	DRAWING NO. D5162					
MFG. APPR.	DD	REV. A SHEET 1 OF 8					
APPROVED	HS	TITLE SEAT STRUCTURE ASSY					
DE APPR.	DS	SCALE NTS					
DATE	14.10.03	CITY NIGHT © 2014 BY DART AEROSPACE LTD					
HAWKESBURY, ONTARIO, CANADA							

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

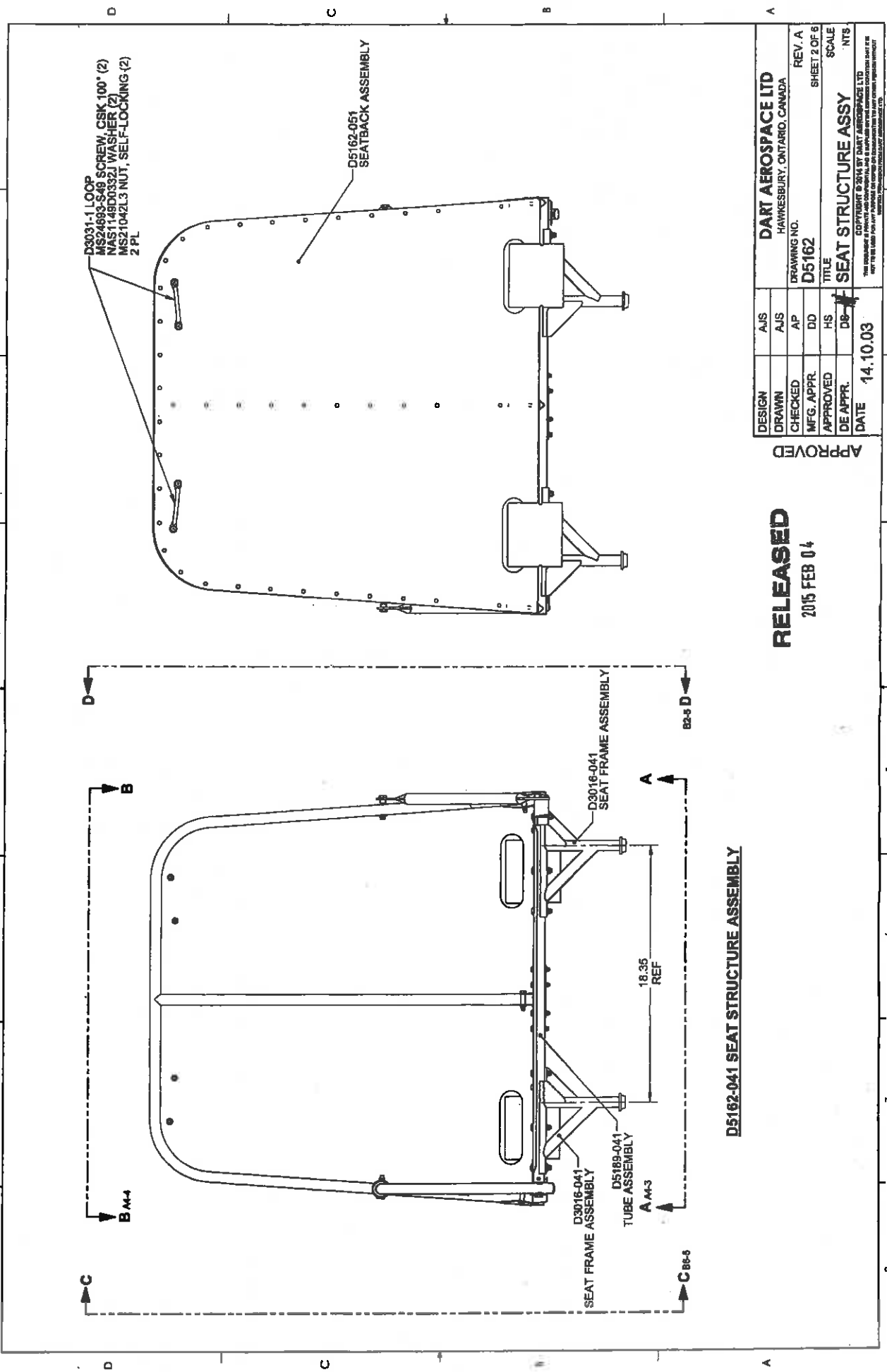


QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube Machining ☐ Thermofforming large Fab ☐ Cross tube Small Fab ☐ Finishing Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging Supplier ☐ Engineering Quality Other ☐	
Date: _____	Step #: _____	QTY Effective: _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Mistread ☐ Turning Sequence ☐		OTHER: ☐	

1 2 3 4 5 6 7 8



D5162-041 SEAT STRUCTURE ASSEMBLY

RELEASED
2015 FEB 04

DESIGN	AJS	AJS	DART AEROSPACE LTD
DRAWN	AJS	AP	HAWKESBURY, ONTARIO, CANADA
CHECKED	AP	DD	DRAWING NO. D5162
MFG. APPR.	DD	HS	REV. A
APPROVED	HS	DS	SHEET 2 OF 6
DE APPR.	DS		TITLE SEAT STRUCTURE ASSY
DATE	14.10.03		SCALE NTS

APPROVED

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



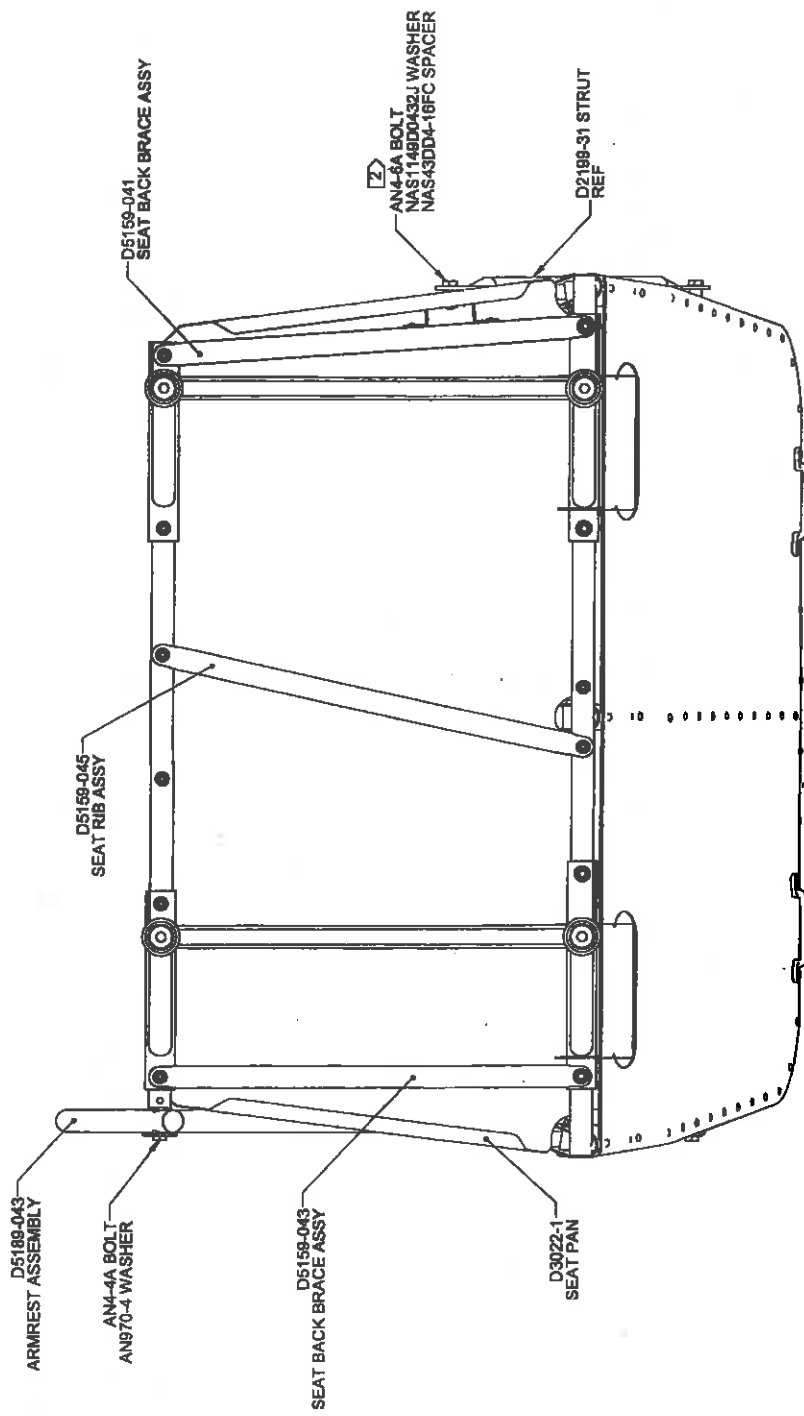
QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION				AGAINST DEPARTMENT/PROCESS																							
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐				Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐				Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐				Engineering ☐ Quality ☐ Other ☐											
NCR No. _____		Date: _____				Step #: _____				QTY Effective: _____				MRB (QS1042) Approval															
Description Work Order Deviation										Disposition										Completed By									
																				Lead hand / Supervisor Approval Verification									
																				QC / QA Coordinator Approval									
Root Cause										FAULT CATEGORY																			
Environment ☐										No Re-verification ☐										Pressure/Forced ☐									
Design ☐										Operator ☐										Bending ☐									
Doc/Data ☐										Offset/Setup ☐										Centre Not Concentric ☐									
Equip/Tooling ☐										Supplier ☐										Cracks ☐									
Handling/Pre ☐										Training ☐										Crimp/Kink/Ripple/Wave ☐									
Material ☐										Use for Testing ☐										Cuffs ☐									
Internal Transport ☐										Poor Information ☐										Crushing ☐									
Tribal Knowledge ☐										Rushing ☐										Heat Treat ☐									
LOA ☐										Product Improvement ☐										Wave/Twist in Tube ☐									
Substation ☐										Process Improvement ☐										Marks/Chatter ☐									
Past Expiry Date ☐										Manufacturing Process ☐																			
Misidentified ☐										Past Due ☐										OTHER: ☐									

8 7 6 5 4 3 2

D C B A



VIEW AA 88-2
(SCALE 1:5X)

RELEASED
2015 FEB 04

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	DRAWING NO. D5162
CHECKED	AP	REV. A
MFG. APPR.	DD	SHEET 3 OF 6
APPROVED	HS	SCALE
DE APPR.	DS	TITLE SEAT STRUCTURE ASSY
DATE 14.10.03		NTS

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SHEET 3 NOTES:
1) INSTALL D2189-31 STRUT AT SEAT PAN END FIRST
2) TRANSFER MARK FROM D5159-041 SEAT BACK BRACE ASSY TO D3022-1 SEAT PAN AND DRILL Ø0.386 THRU D3022-1 SEAT PAN.

DQA: _____ Date: _____

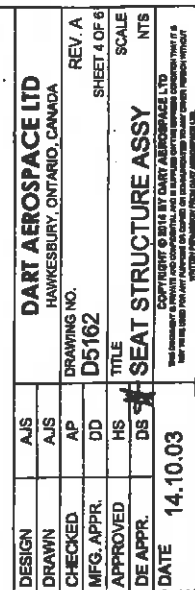
WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION				AGAINST DEPARTMENT/PROCESS															
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐				Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐				Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐				Engineering ☐ Quality ☐ Other ☐			
NCR No. _____		Step #:				QTY Effective :				MRB (QS1042) Approval											
Date : _____		Description Work Order Deviation				Disposition				Completed By											
										Lead hand / Supervisor Approval Verification											
										QC / QA Coordinator Approval											
Root Cause		FAULT CATEGORY																			
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐										
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐										
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐										
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐										
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐										
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐										
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐										
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐										
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐										
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐										
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :																	
Misidentified	☐	Past Due	☐																		



RELEASED

2015 FEB 04

APPROVED

SHEET 4 NOTES:

SHEET 4 NOTES:
1) TRANSFER MARK FROM D5158-041/-043/-045 TO D3022-1 SEAT PAN
DRILL Ø0.128 THRU SEAT PAN THEN INSTALL MS20600AD4W4/5 RIVETS.

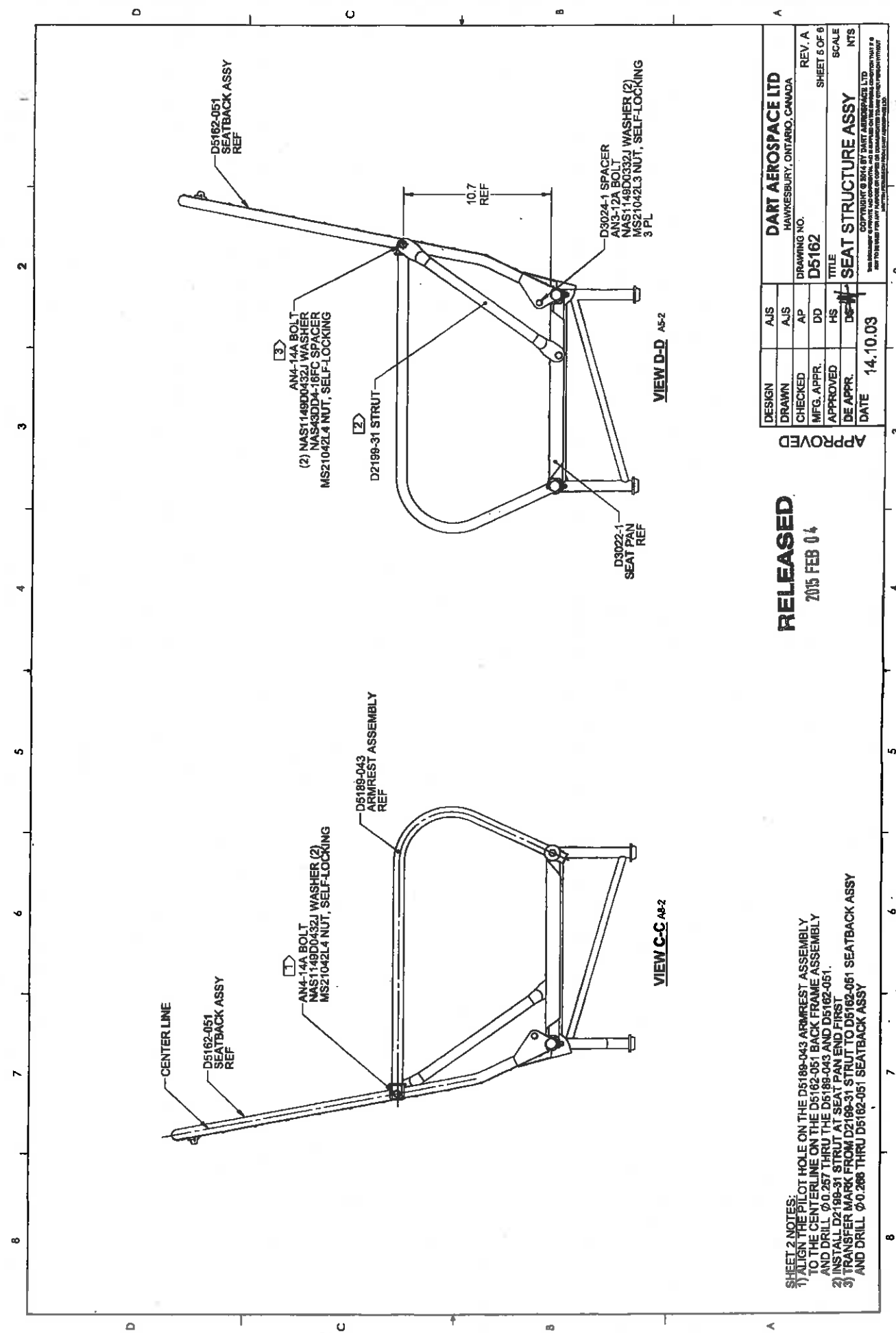
DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date: _____	Step #: _____	QTY Effective: _____		MRB (QS1042) Approval			
Description Work Order Deviation				Disposition			
				Completed By			
				Lead hand / Supervisor Approval Verification			
				QC / QA Coordinator Approval			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER: _____		OTHER: _____					



RELEASED
2015 FEB 04

SHEET 2 NOTES:
1) ALIGN THE PILOT HOLE ON THE D5189-043 ARMREST ASSEMBLY TO THE CENTERLINE ON THE D5162-051 BACK FRAME ASSEMBLY AND DRILL Ø0.257 THRU THE D5189-043 AND D5162-051.
2) INSTALL D2199-31 STRUT AT SEAT PAN END FIRST
3) TRANSFER MARK FROM D2199-31 STRUT TO D5162-051 SEATBACK ASSY AND DRILL Ø0.288 THRU D5162-051 SEATBACK ASSY

DESIGN		AJS	DART AEROSPACE LTD	
DRAWN		AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		AP	DRAWING NO.	
MFG. APPR.		DD	D5162	
APPROVED		HS	TITLE	
DE APPR.		DE	SEAT STRUCTURE ASSY	
DATE		14.10.03	SCALE	
			SHEET 6 OF 8	
			REV. A	
			N/A	

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermofforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐				Date : _____ Step #: _____ QTY Effective : _____		MRB (QS1042) Approval ☐	
Description Work Order Deviation		Disposition		Completed By		Lead hand / Supervisor Approval Verification		QC / QA Coordinator Approval			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		FAULT CATEGORY No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Mistread ☐ Turning Sequence ☐	
OTHER : _____											

ITEM	QTY	PIN	DESCRIPTION
	X	D5162-051	SEATBACK ASSEMBLY
1	1	D3017-041	BACK FRAME ASSEMBLY
2	1	D3023-1	BACK PANEL
3	48	MS20600AD4W2	RIVET, BLIND

MS20600AD4W2
RIVET, BLIND
48 PL

D3023-1
BACK PANEL

D3017-041
BACK FRAME ASSEMBLY

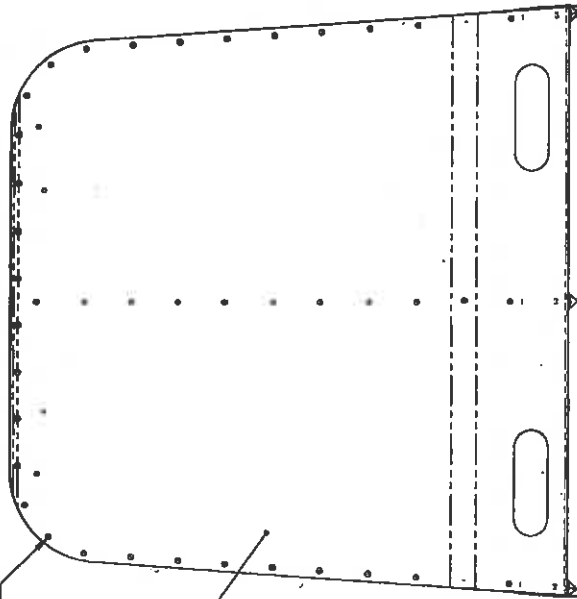
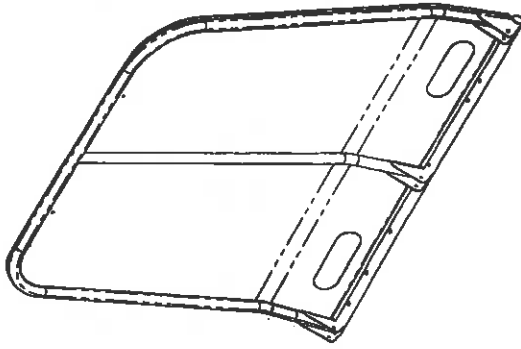
D5162-051 SEATBACK ASSEMBLY

- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: POWDER COAT GREY SANDTEX (4.3.5.6) PER DART OSI 005.4.3
 - 3) TOLERANCES: PER DART OSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 7.42 lbs
 - 8) TRANSFER MARK FROM D3023-1 TO D3017-041
DRILL Ø 0.129 INTO THE D3017-041 (DRILL THRU ONE WALL ONLY).
THEN INSTALL MS20600AD4W2 RIVETS.

RELEASED
2015 FEB 04

APPROVED

DESIGN	AJS	DART AEROSPACE LTD
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA
CHECKED	AP	DRAWING NO.
MFG. APPR.	DD	D5162
APPROVED	HS	TITLE
DE APPR.	DS	SEAT STRUCTURE ASSY
DATE	14.10.03	SCALE
		NTS
		SHEET 6 OF 6
		REV. A



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

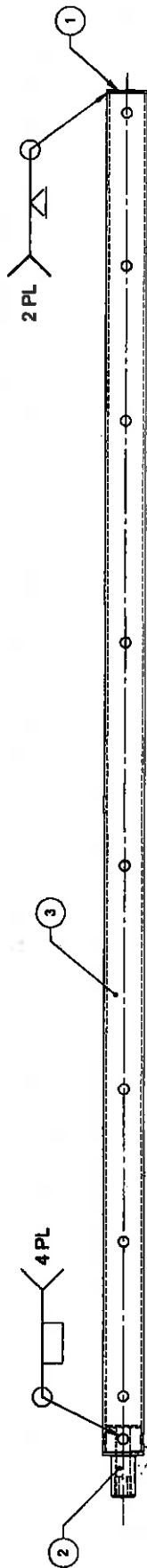


QA Closed: _____ Date: _____

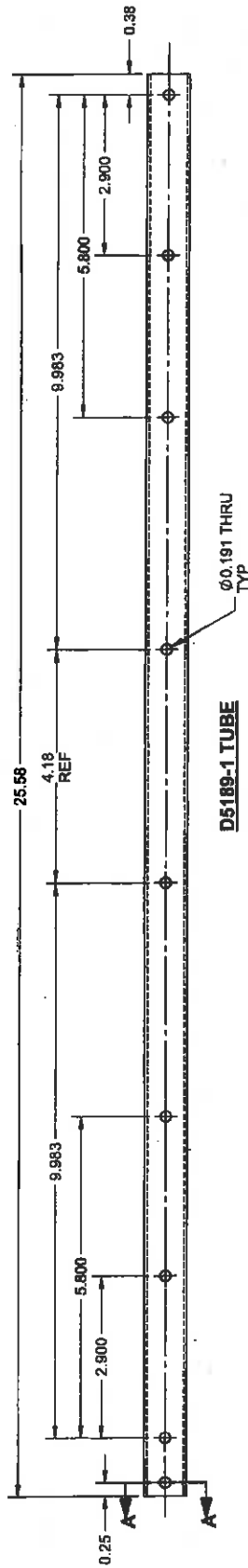
Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS											
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐		Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐					
NCR No. _____		Suspected Unapproved ☐		QTY Effective: _____		MRB (QS1042) Approval ☐									
Date: _____		Step #: _____		Disposition		Completed By									
Description Work Order Deviation				Disposition											
				lead hand / Supervisor Approval Verification											
				QC / QA Coordinator Approval											
Root Cause				FAULT CATEGORY											
Environment ☐				Pressure/Forced ☐				Power Loss/Surge ☐				Positioned Wrong ☐			
Design ☐				Operator ☐				Temperature/Cure ☐				Folio/Program ☐			
Doc/Data ☐				Offset/Setup ☐				Set-up ☐				Outside Dimensions ☐			
Equip/Tooling ☐				Supplier ☐				BOM/Route ☐				Over/Under tolerance ☐			
Handling/Pre ☐				Training ☐				Broken/Damage/Defect ☐				Part Incorrect ☐			
Material ☐				Use for Testing ☐				Inspection Incomplete/Unqualified ☐				Part Lost/Missing ☐			
Internal Transport ☐				Poor Information ☐				Contamination ☐				Part Moved ☐			
Tribal Knowledge ☐				Rushing ☐				Crushing ☐				Drawing ☐			
LOA ☐				Product Improvement ☐				Heat Treat ☐				Finish ☐			
Substation ☐				Process Improvement ☐				Wave/Twist in Tube ☐				Misread ☐			
Past Expiry Date ☐				Manufacturing Process ☐				Marks/Chatter ☐				Turning Sequence ☐			
Misidentified ☐				Past Due ☐				OTHER: ☐							

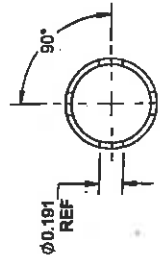
ITEM	QTY	P/N	DESCRIPTION
1	X	D5189-041	TUBE ASSEMBLY
2	1	D3017-11	END CAP
3	1	D4687-041	ARMREST STUD ASSY
4	1	D5189-1	TUBE



D5189-041 TUBE ASSEMBLY



D5189-1 TUBE



- NOTES:**
- 1) MATERIAL -041: N/A
-1: AISI 4130N SEAMLESS STEEL TUBING, Ø0.750 X 0.049 WALL PER MIL-1-6736 OR AMS 6371/6362/6373/6374
REF: M4130N10.750W0.049
 - 2) FINISH -041: POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.85 lbs
 - 8) WELD PER DART QSI 004

RELEASED

2015 FEB 04

ECN 13-172Z of

A	REV.	NEW ISSUE	DESCRIPTION	AJS	BY	DATE
DESIGN		AJS				14.11.18
DRAWN		AJS				
CHECKED		AP				
MFG. APPR.		DD				
APPROVED		HS				
DE APPR.		DS				
DATE		14.11.18				

DART AEROSPACE LTD	REV. A
HAWKESBURY, ONTARIO, CANADA	SHEET 1 OF 3
DRAWING NO. D5189	SCALE NTS
TITLE	ARMREST COMPONENTS
DATE	14.11.18

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

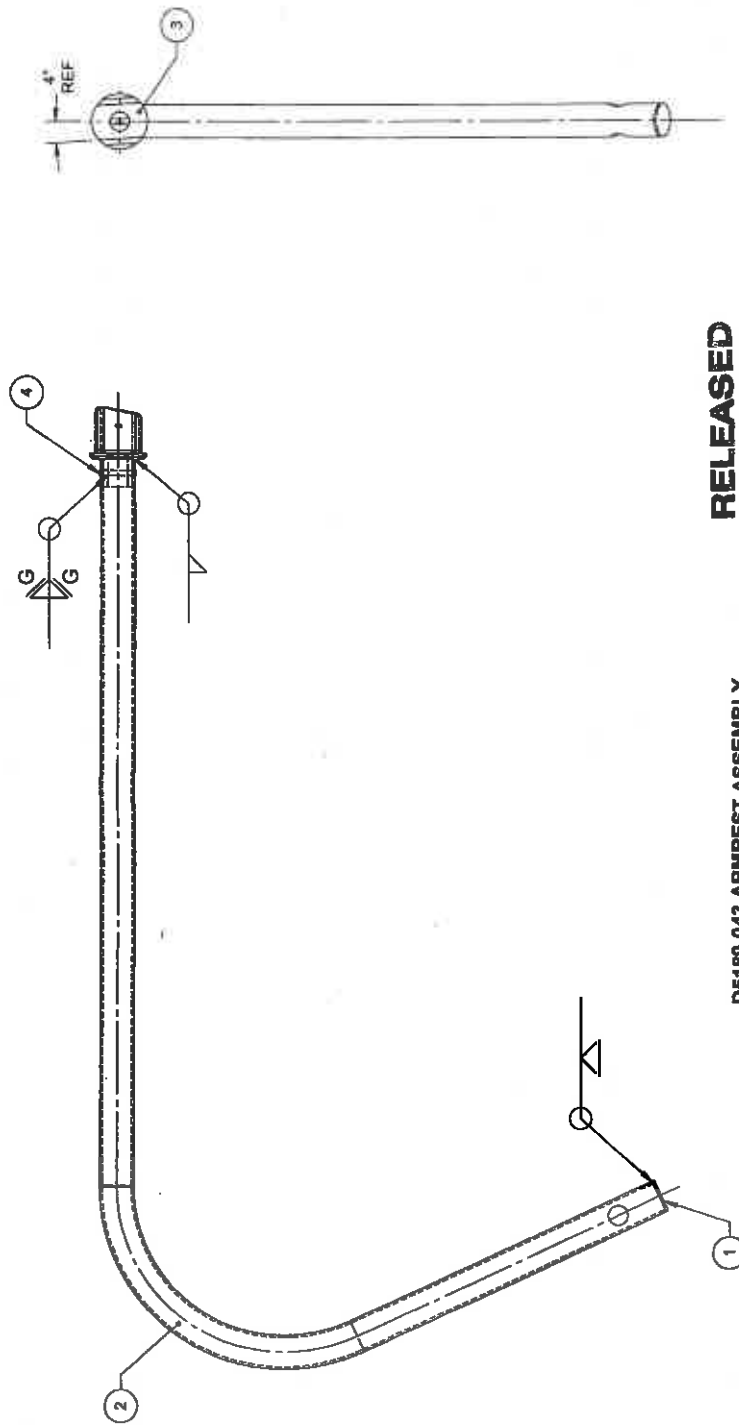


QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS																			
Part No. _____		Rework ☐	Scrap ☐	Use-as-is ☐	Suspected Unapproved ☐	Skid-tube Machining ☐	Thermoforming ☐	Large Fab ☐	Cross tube ☐	Small Fab ☐	Finishing ☐	Composite ☐	Water Jet ☐	Prod. Eng. Coord. ☐	Rec/Store/Packaging ☐	Supplier ☐	Engineering ☐	Quality ☐	Other ☐				
NCR No. _____																							
Date: _____	Step #: _____	QTY Effective: _____		MRB (QS1042) Approval																			
Description Work Order Deviation				Disposition																Completed By			
																				Lead hand / Supervisor Approval Verification			
																				QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY																					
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐												
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐												
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐												
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐												
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐												
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐												
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Mislabeled	☐	Drawing	☐												
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Fit/Function	☐	Finish	☐												
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Misaligned/off center	☐	Misread	☐												
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐		☐	Turning Sequence	☐												
Past Expiry Date	☐	Manufacturing Process	☐		☐		☐		☐		☐												
Misidentified	☐	Past Due	☐		☐		☐		☐		☐												
				OTHER: _____																			

ITEM	QTY	PIN	DESCRIPTION
	X	D5189-043	ARMREST ASSEMBLY
1	1	D3017-11	END CAP
2	1	D5189-3	ARMREST
3	1	D5190-1	ARMREST FITTING
4	1	D6180-3	WELD PIN



RELEASED

2015 FEB 04

D5189-043 ARMREST ASSEMBLY

NOTES:
 1) MATERIAL: N/A
 2) FINISH: POWDER COAT GREY SANDETEX (4.3.5.6) PER DART QSI 005 4.3
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 6) IDENTIFICATION: NONE
 7) WEIGHT: 1.08 lbs
 8) WELD PER DART QSI 004

DESIGN	AJS	DART AEROSPACE LTD
DRAWN	AJS	HAYESBURY, ONTARIO, CANADA
CHECKED	AP	DRAWING NO.
MFG. APPR.	DD	D5189
APPROVED	HS	TITLE
DATE	14.11.18	SCALE
		ARMREST COMPONENTS
		NTS
		COMPONENTS © 2014 BY DART AEROSPACE LTD
		THIS DOCUMENT IS UNCLASSIFIED AND IS AVAILABLE TO THE PUBLIC WITHOUT LIMITATION
		REF: THIS DRAWING IS A PART OF THE DART AEROSPACE LTD. DRAWING SET

APPROVED

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

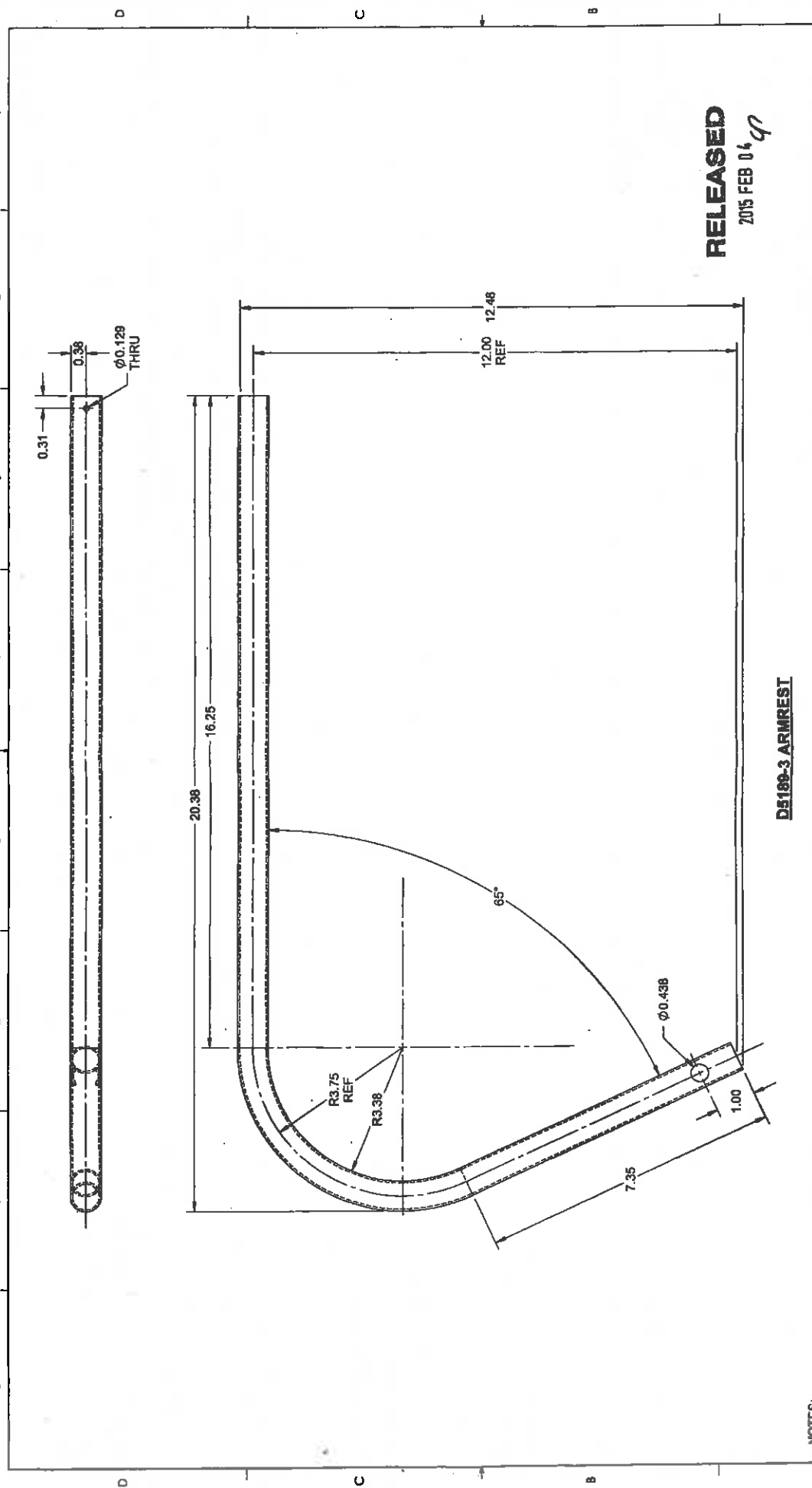


QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION				AGAINST DEPARTMENT/PROCESS																			
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐				Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐				Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐				Engineering ☐ Quality ☐ Other ☐							
NCR No. _____																									
Date : _____		Step #: _____		QTY Effective : _____		Disposition																			
Description Work Order Deviation						Disposition																			
																				Completed By					
																				Lead hand / Supervisor Approval Verification					
																				QC / QA Coordinator Approval					
Root Cause						FAULT CATEGORY																			
Environment: ☐ No Re-verification ☐						Pressure/Forced ☐						Temperature/Cure ☐						Power Loss/Surge ☐							
Design ☐ Operator ☐						Bending ☐						Set-up ☐						Folio/Program ☐							
Doc/Data ☐ Offset/Setup ☐						Centre Not Concentric ☐						BOM/Route ☐						Grain ☐							
Equip/Tooling ☐ Supplier ☐						Cracks ☐						Broken/Damage/Defect ☐						Weld ☐							
Handling/Pre ☐ Training ☐						Crimp/Kink/Ripple/Wave ☐						Inspection Incomplete/Unqualified ☐						Wrong Stock Pulled ☐							
Material ☐ Use for Testing ☐						Cuffs ☐						Contamination ☐						Out of Sequence ☐							
Internal Transport ☐ Poor Information ☐						Crushing ☐						Countersink ☐						Off-set ☐							
Tribal Knowledge ☐ Rushing ☐						Heat Treat ☐						Cut Too Short ☐						Mislabeled ☐							
LOA ☐ Product Improvement ☐						Wave/Twist in Tube ☐						Instructions Incomplete/Unclear ☐						Fit/Function ☐							
Substation ☐ Process Improvement ☐						Marks/Chatter ☐						Drill Holes ☐						Misaligned/off center ☐							
Past Expiry Date ☐ Manufacturing Process ☐																									
Misidentified ☐ Past Due ☐																									
						OTHER : _____																			

1 2 3 4 5 6 7 8



NOTES:
 1) MATERIAL: AISI 4130N SEAMLESS STEEL TUBING, $\phi 0.750 \times 0.049$ WALL
 PER MIL-T-8738 OR AMS 6371/6360/6361/6362/6373/6374
 REF M4130NT0.750W0.049
 2) FINISH: NONE.
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 6) IDENTIFICATION: NONE
 7) WEIGHT: 0.95 lbs

D5189-3 ARMREST

RELEASED
 2015 FEB 04

DESIGN	AJS	DART AEROSPACE LTD
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA
CHECKED	AP	DRAWING NO.
MFG. APPR.	DD	D5189
APPROVED	HS	REV. A
DE APPR.	DS	SHEET 3 OF 3
DATE	14.11.18	TITLE
		ARMREST COMPONENTS
		SCALE
		NTS

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS											
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐		Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐					
NCR No. _____		Suspected Unapproved ☐		QTY Effective: _____											
Date: _____		Step #: _____		MRB (QS1042) Approval											
Description Work Order Deviation				Disposition											
				Completed By											
				Lead hand / Supervisor Approval Verification											
				QC / QA Coordinator Approval											
Root Cause				FAULT CATEGORY											
Environment ☐				Pressure/Forced ☐				Temperature/Cure ☐				Power Loss/Surge ☐			
Design ☐				Operator ☐				Set-up ☐				Folio/Program ☐			
Doc/Data ☐				Offset/Setup ☐				BOM/Route ☐				Grain ☐			
Equip/Tooling ☐				Supplier ☐				Broken/Damage/Defect ☐				Weld ☐			
Handling/Pre ☐				Training ☐				Inspection Incomplete/Unqualified ☐				Wrong Stock Pulled ☐			
Material ☐				Use for Testing ☐				Contamination ☐				Out of Sequence ☐			
Internal Transport ☐				Poor Information ☐				Crushing ☐				Off-set ☐			
Tribal Knowledge ☐				Rushing ☐				Heat Treat ☐				Misabeled ☐			
LOA ☐				Product Improvement ☐				Wave/Twist in Tube ☐				Fit/Function ☐			
Substation ☐				Process Improvement ☐				Marks/Chatter ☐				Misaligned/off center ☐			
Past Expiry Date ☐				Manufacturing Process ☐				OTHER: _____				Turning Sequence ☐			
Misidentified ☐				Past Due ☐											